

SAFETY PRECAUTIONS

SERVICE WARNING

Only qualified service technicians who are familiar with safety checks and guidelines should perform service work. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Do not attempt to modify any circuit unless so recommended by the manufacturer. When servicing the receiver, use an isolation transformer between the line cord and power receptacle.

SERVICING THE HIGH VOLTAGE AND CRT

Use EXTREME CAUTION when servicing the high voltage circuits. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver ground and CRT anode lead. DO NOT lift the CRT by the neck. Always wear shatterproof goggles when handling the CRT to protect eyes in case of implosion.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Be aware of the instructions and procedures covering X-ray radiation. In solid-state receivers and monitors, the CRT is the only potential source of X-rays. Keep an accurate high voltage meter available at all times. Check meter calibration periodically. Whenever servicing a receiver, check the high voltage at various brightness levels to be sure it is regulating properly. Keep high voltage at rated value, NO HIGHER. Excessive high voltage may cause X-ray radiation or failure of associated components. DO NOT depend on protection circuits to keep voltage at rated value. When troubleshooting a receiver with excessive high voltage, avoid close contact with the CRT. DO NOT operate the receiver longer than necessary. To locate the cause of excessive high voltage, use a variable AC transformer to regulate voltage. In present receivers, many electrical and mechanical components have safety related characteristics which are not detectable by visual inspection. Such components are identified by a # on both the schematic and the parts list. For SAFETY, use only equivalent replacement parts when replacing these components.

GENERAL GUIDELINES

Perform a final SAFETY CHECK before returning receiver to customer. Check repaired area for poorly soldered connections, and check entire circuit board for solder splashes. Check board wiring for pinched wires or wires contacting any high wattage resistors. Check that all control knobs, shields, covers, grounds, and mounting hardware have been replaced. Be sure to replace all insulators and restore proper lead dress.

The listing of any available replacement part herein in no case constitutes a recommendation, warranty, or guarantee by SAMS Technical Publishing as to the quality and suitability of such replacement part. The numbers of the listed parts have been compiled from information furnished to SAMS Technical Publishing by the manufacturers of the specific type of replacement part listed.

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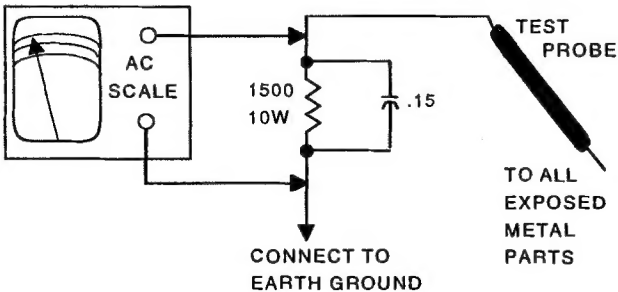
SAFETY CHECKS — FIRE AND SHOCK HAZARD

Cold Leakage Checks for Receivers with Isolated Ground

Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

Hot Leakage Current Check

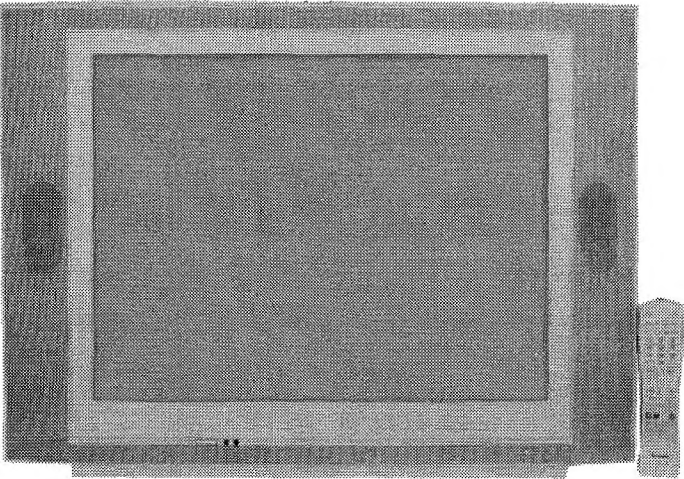
Plug the AC cord directly into an AC outlet. DO NOT use an isolation transformer. Use a 1500 ohms, 10W resistor in parallel with a .15µF capacitor to connect between any exposed metal parts on the receiver and a good earth ground. (See figure below.) Use an AC voltmeter with at least 5000 ohms per volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point. Voltage measurements should not exceed .75VAC, 500µA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected. If the AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.



PHOTOFACT<sup>®</sup> Technical Service Data  
SILVER

PHILIPS

Models 27PT81S125 (Chassis 27H8)



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Essential coverage  
for servicing a television receiver...

- Schematics
- Component locations
- Parts list

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Technical Publishing

SEPTEMBER 2002 SET 4634

SET 4634

MODEL 27PT81S125 (CHASSIS 27H8)

PHILIPS

For Supplier Address,  
See PHOTOFACT Annual Index



## H



**PHILIPS**  
**MODEL 27PT81S125 (CHASSIS 27H8)**

[illegible]

IC7630  
8 1  
9 16

Q7053

Q7063

IC7066  
8 5  
1 4

Q7415

Q7446

The schematic diagram illustrates the internal circuitry of a radio receiver's front panel. Key components and their connections are as follows:

- Power Supply Section:**
  - A 5.0V source (labeled 7C) is connected to the 1 pin of IC7803 and the 1 pin of M0201.
  - An 8.0V source (labeled 3C) is connected to the 10 pin of IC7803 and the 10 pin of M0201.
  - A 3.3V source (labeled 9) is connected to the 42 pin of IC7803 and the 1 pin of M0205.
  - Another 3.3V source (labeled 11) is connected to the 21 pin of IC7803 and the 1 pin of M0200.
- IC7803 (Rectifier/Filter):** A vertical component with pins 1, 42, 10, 21, and 22. It is connected to the 5.0V and 8.0V sources and the 3.3V source (9).
- IC7914 (Tuner/Processor):** A vertical component with pins 1, 20, 10, and 11. It is connected to the 5.0V source and the 3.3V source (11).
- TU1900 TUNER:** A vertical component connected to the 10 pin of IC7914 and the 3.3V source (11).
- Transistors:**
  - Q7891 is connected to the 10 pin of IC7803 and the 10 pin of M0201.
  - Q7912 is connected to the 10 pin of IC7914 and the 10 pin of M0200.
- Capacitors and Inductors:**
  - L5890, L5891, L5892, L5901, and L5902 are inductors connected to various pins of IC7803 and IC7914.
  - C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100 are capacitors connected to various pins of IC7803 and IC7914.

IC7919

9 8

16 1

Q7807 □

Q7810 □

Q7805 □

Q7805

□

Q7813 □

Q7804

□

Q7816 □

Q7817

□

Q7911

□

Q7801

1 16

8 9

IC7801

Q7915

□

Q7910

9 8

16 1

IC7910

Q7920

□

Q7917

□

IC7915

1 16

Q7918

□

8 9

[illegible]

(1) M0224

1 4 6

5.0V 23

Q7753 □

Q7754 □

Q7752 □

Q7751 □

(1) LOCATED ON TOP OF BOARD

**F**



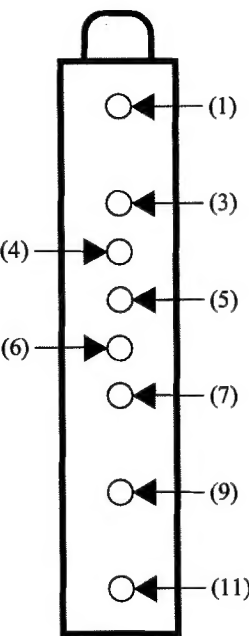
TUNER INFORMATION

MAIN TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band
(1) AGC	1.9V	2.0V	2.9V
(3) NC	4.9V	4.9V	4.9V
(4) SCL	3.5V	3.5V	3.5V
(5) SDA	3.2V	3.2V	3.2V
(6) +5V	5.0V	5.0V	5.0V
(7) +5V	5.0V	5.0V	5.0V
(9) +33V	33.0V	33.0V	33.0V
(11) IF	0V	0V	0V

NOTE: VHF Low Band voltages taken on channel 2.  
VHF High Band voltages taken on channel 7.  
UHF Band voltages taken on channel 14

MAIN TUNER TERMINAL GUIDE

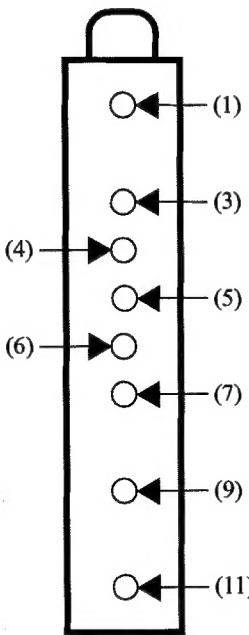


PIP TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band
(1) AGC	4.1V	4.1V	4.2V
(3) NC	0V	0V	0V
(4) SCL	3.5V	3.5V	3.5V
(5) SDA	3.2V	3.2V	3.2V
(6) MB1	5.0V	5.0V	5.0V
(7) MB2	5.0V	5.0V	5.0V
(9) TU2	33.0V	33.0V	33.0V
(11) IF	0V	0V	0V

NOTE: VHF Low Band voltages taken on channel 2.  
VHF High Band voltages taken on channel 7.  
UHF Band voltages taken on channel 14

PIP TUNER TERMINAL GUIDE



Important Parts Information

- The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- Where items may be replaced with equivalent parts, several alternates are shown from participating vendors.
- On the parts lists, safety items are marked with a # to remind you that only exact replacements are recommended for these items.
- When ordering parts, state the model number, part number, and description.

Obtaining Parts

Many of these parts are available from your local Sams authorized distributor or the manufacturer of the equipment. Call Sams for the name of your nearest distributor:

800-428-7267

Or consult the Sams *Annual Index* for the address of the original equipment manufacturer.

Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors. Consult the Sams *Annual Index* for their current address.

- NTE Electronics, Inc. (NTE)
- Sencore, Inc.

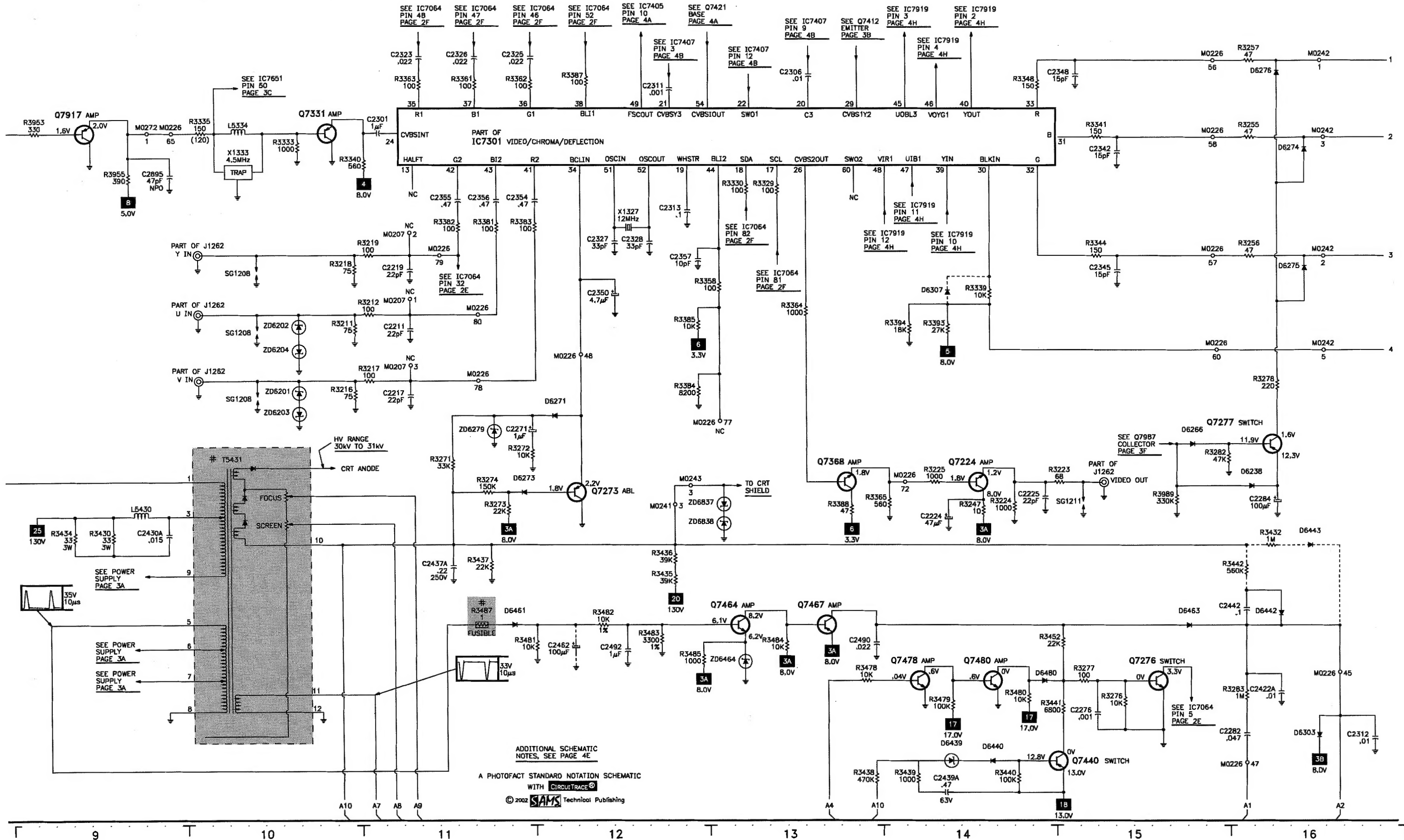
TEST EQUIPMENT

Test equipment listed by participating manufacturer illustrates typical or equivalent equipment used by Sams engineers to obtain measurements. This equipment is compatible with most types used by field service technicians.

Equipment	Sencore No.	Equipment	Sencore No.
Oscilloscope	SC3100	Isolation Transformer	PR570
Generators		Capacitance Analyzer	LC102
RGB	CM2125	CRT Analyzer	CR7000
Multiburst Signal	VG91	AC Leakage Tester	PR570
Color Bar	VG91	Inductance Analyzer	LC102
TV Stereo	VG91	Flyback Yoke Tester	TVA92
Digital VOM	SC3100	Field Strength Meter	SL753
Frequency Meter	SC3100	Transistor Tester	TF46
Hi-Voltage Probe	HP200	Horizontal Analyzer	HA-2500
Accessory Probes	TP212	Video Analyzer	VG91, TVA92

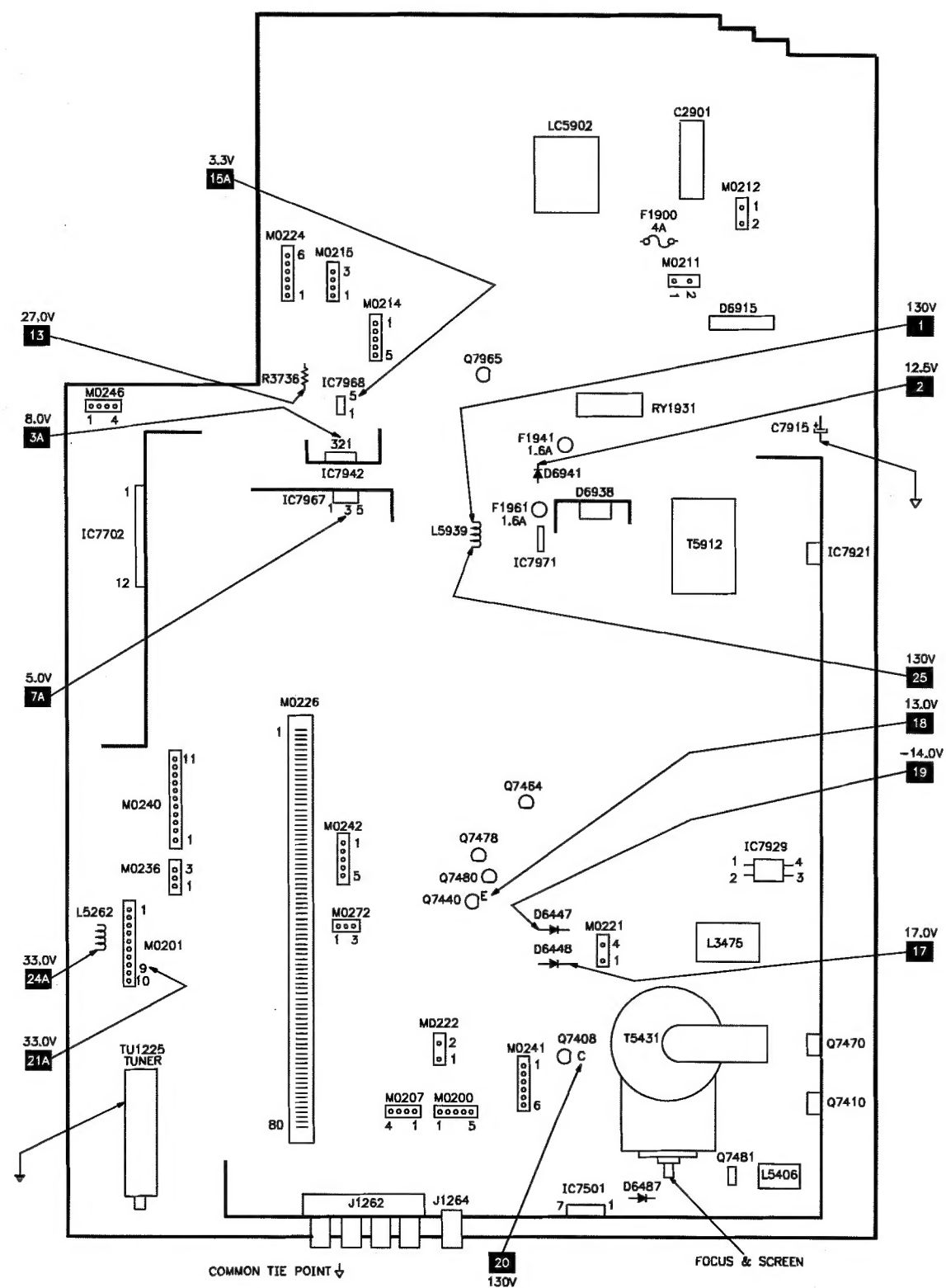


SEE IC7064	SEE IC7064	SEE IC7064	SEE IC7064	SEE IC7405	SEE Q7421	SEE IC7919	SEE IC7919
PIN 48	PIN 47	PIN 46	PIN 52	PIN 10	BASE	PIN 3	PIN 2
PAGE 2F	PAGE 2F	PAGE 2F	PAGE 2F	PAGE 4A	PAGE 4A	PAGE 4H	PAGE 4H
					SEE IC7407	SEE Q7412	

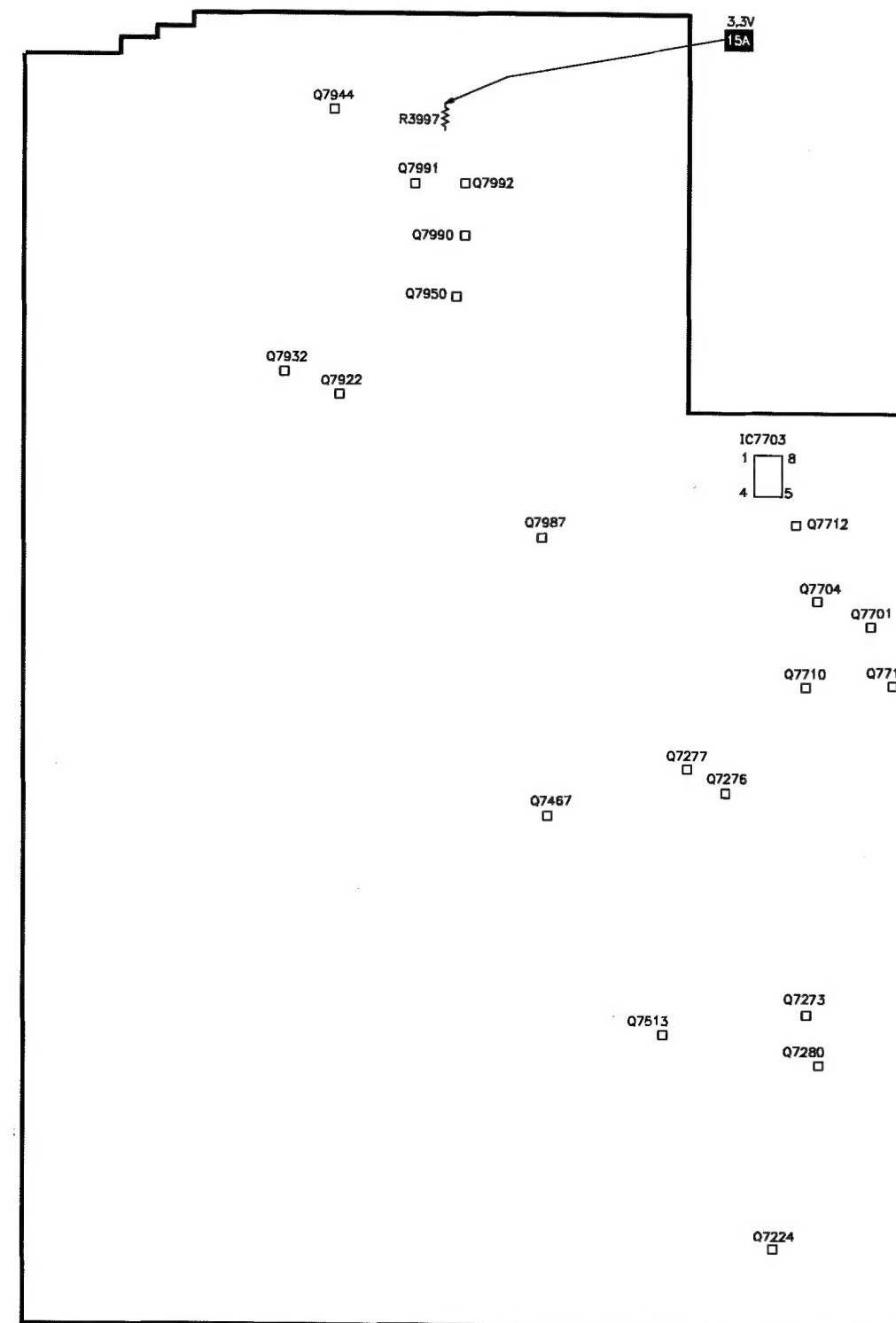


## PLACEMENT CHART

### LARGE SIGNAL BOARD - TOP VIEW



**LARGE SIGNAL BOARD - BOTTOM VIEW**



A

TELEVISION SCHEMATIC

B

ADDITIONAL SCHEMATIC  
NOTES, SEE PAGE 4E

A PHOTOFAC STANDARD NOTATION SCHEMATIC

WITH CIRCUITTRACE

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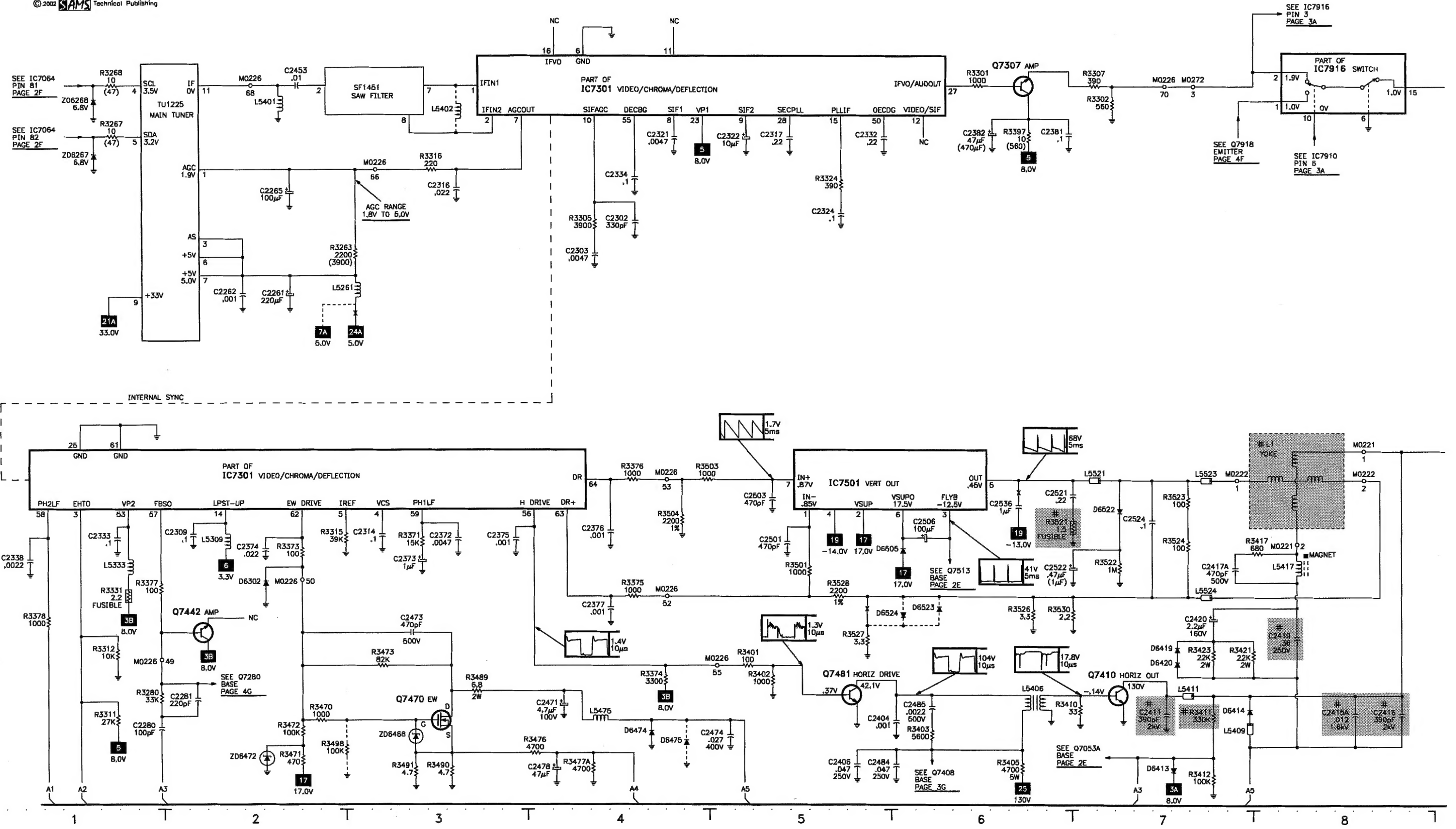
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C

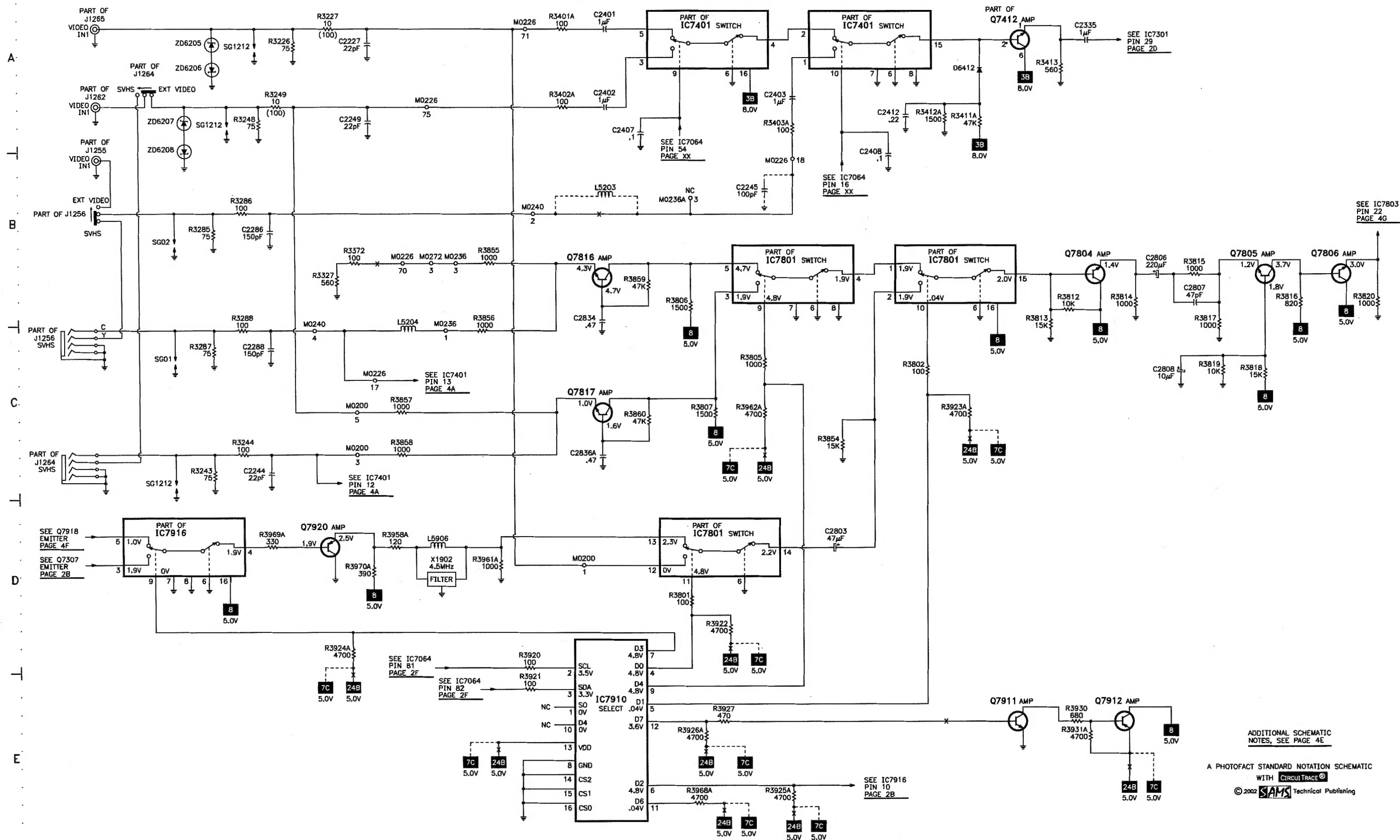
D

E





# VIDEO SWITCHING SCHEMATIC



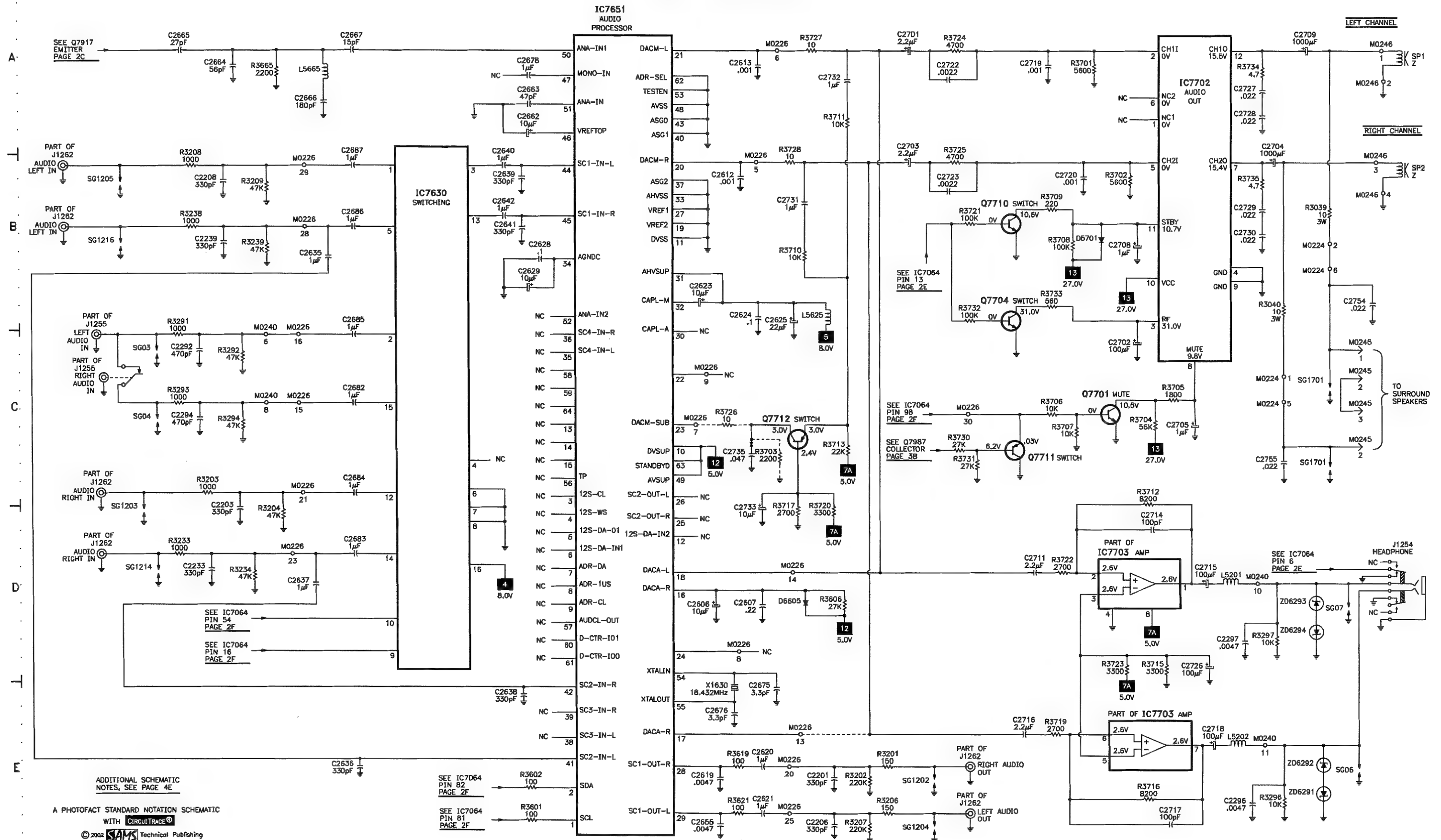
ADDITIONAL SCHEMATIC NOTES, SEE PAGE 4E

A PHOTOFAC STANDARD NOTATION SCHEMATIC  
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## SCHEMATIC COMPONENT LOCATION GUIDE

AC01	A49	C2335	A38	C2478	E4	C2723	B46	C2895	B9	D6461	D11	IC7919	C82	LC5902	A50	R3013	C22	R3244	C34	R3394	C14	R3487	D11	R3813	C38	R3917	C54	RY1931	B50
AC10	A51	C2338	D1	C2484	E5	C2726	D47	C2902	A49	D6463	D15	IC7921	B52	Q7053A	C18	R3014	C22	R3247	D14	R3397	B6	R3488	D51	R3814	B39	R3920	E35	S1000	B17
C2001	A17	C2340A	E60	C2485	E6	C2727	A47	C2908	A51	D6474	E4	IC7929	B50	Q7053B	D18	R3015	A19	R3248	A34	R3401	E5	R3488A	B63	R3815	B39	R3921	E35	S1091	B17
C2010	B19	C2342	B15	C2490	D13	C2728	A47	C2909	A51	D6475	E4	IC7942	C54	Q7063	C18	R3017	B22	R3249	A34	R3401A	A35	R3489	E3	R3816	B40	R3922	D36	S1092	B17
C2012	B18	C2345	B15	C2492	D12	C2729	B47	C2911	D59	D6480	E14	IC7967	D54	Q7224	D14	R3018	A22	R3255	B16	R3402	E5	R3489A	A62	R3817	C39	R3923	C51	S1093	B17
C2012A	C19	C2348	A15	C2499	A68	C2730	B47	C2915	A52	D6505	D6	IC7968	E54	Q7273	D12	R3019	A22	R3256	B16	R3402A	A35	R3490	E3	R3818	C39	R3923A	C38	S1094	B17
C2014	D19	C2350	B12	C2501	D5	C2731	B45	C2915A	D59	D6511	D17	IC7971	B49	Q7276	E15	R3021	B18	R3257	A16	R3403	E6	R3490A	A66	R3819	C39	R3924	C51	SF1451	B3
C2015	D19	C2354	B12	C2503	D5	C2732	A45	C2916	D58	D6512	D17	J1254	D48	Q7277	C16	R3022	B19	R3263	B3	R3403A	A37	R3491	E3	R3820	B40	R3924A	D34	SF1901	A71
C2016	C21	C2355	B11	C2505	D52	C2733	D45	C2917	B70	D6522	D7	J1255	B33	Q7280	E78	R3023	E19	R3267	B1	R3404	C62	R3491A	A66	R3821	C80	R3925	C51	SG01	C33
C2017	B21	C2356	B11	C2506	D6	C2735	C45	C2919	B51	D6523	D6	J1255	C41	Q7307	B6	R3024	C22	R3268	B1	R3405A	C62	R3492	B66	R3822	B81	R3925A	E37	SG02	B33
C2018	D18	C2357	B12	C2521	D6	C2751	E56	C2920	C70	D6524	D6	J1255	C41	Q7331	B10	R3030	C22	R3271	C11	R3405	E6	R3493	B66	R3823	B80	R3926	B50	SG03	C41
C2041	A21	C2372	D3	C2522	D6	C2754	B48	C2921	B51	D6605	D45	J1256	B33	Q7368	D13	R3031	D18	R3272	C11	R3409	B59	R3498	E2	R3824	C80	R3926A	E36	SG04	C41
C2042	A21	C2373	D3	C2523	E52	C2755	C47	C2921A	B73	D6701	B46	J1256	C20	Q7408	B58	R3034	D22	R3273	D11	R3410	E6	R3501	D5	R3825	D80	R3927	E36	SG06	E48
C2043	C18	C2374	D2	C2524	D7	C2756	E56	C2922	C52	D6751	D24	J1256	C33	Q7410	E7	R3035	D19	R3274	D11	R3411	E7	R3503	D4	R3826	D80	R3928	C50	SG07	D48
C2044	B21	C2375	D3	C2531	B59	C2757	E56	C2923	D59	D6752	D24	J1262	A33	Q7412	A38	R3037	B23	R3276	E15	R3411A	A38	R3504	D4	R3827	D79	R3930	E38	SG1202	E45
C2045	E18	C2376	D4	C2536	D6	C2801	D60	C2924	B72	D6753	C24	J1262	B41	Q7412	C64	R3038	B23	R3277	E15	R3412	E7	R3511	D17	R3828	C79	R3931	B49	SG1203	D41
C2046	E18	C2377	D4	C2601	D59	C2803	D37	C2925	C51	D6754	C24	J1262	B41	Q7415A	A65	R3039	B48	R3278	C16	R3412A	A38	R3512	D17	R3829	C79	R3931A	E38	SG1204	E45
C2049	C59	C2380	C59	C2602	D59	C2804	E78	C2925A	B72	D6801	E79	J1262	D15	Q7415B	B65	R3040	B47	R3280	E1	R3413	A38	R3513	D17	R3830	B79	R3932	B49	SG1205	B41
C2050	A18	C2381	B6	C2606	D44	C2805	D59	C2926	B72	D6831	A27	J1262	D41	Q7421	A62	R3042	B22	R3281	E78	R3414	B58	R3521	D6	R3831	A26	R3933	B70	SG1211	D15
C2051	B21	C2382	B6	C2607	D45	C2806	B39	C2927	C50	D6832	C26	J1262	D41	Q7425	D66	R3043	B22	R3282	C16	R3414A	D64	R3522	D7	R3831A	B79	R3934	B70	SG1212	A34
C2053	C59	C2401	A36	C2612	B44	C2807	B39	C2927A	B72	D6833	B27	J1262	E46	Q7440	E14	R3044	D19	R3283	E16	R3415	D64	R3523	D7	R3832	A27	R3936	B69	SG1212	B34
C2201	E45	C2402	A36	C2613	A45	C2808	C39	C2928	B71	D6835	B27	J1262	E46	Q7442	E2	R3045	B20	R3285	B34	R3416	C64	R3524	D7	R3832A	B80	R3937	A69	SG1212	D33
C2203	D42	C2403	A37	C2619	E44	C2809	D78	C2929	C52	D6861	A32	J1264	A33	Q7446	B62	R3046	D22	R3286	B34	R3417	D7	R3526	D6	R3833	B26	R3938	C70	SG1214	D41
C2206	E45	C2404A	C62	C2620	E45	C2810	D78	C2929A	B71	D6862	A32	J1264	B20	Q7464	D13	R3051	C21	R3287	C34	R3417A	A62	R3527	E5	R3833A	C79	R3942	D55	SG1216	B41
C2208	B42	C2404	E5	C2621	E45	C2811	E59	C2930	A83	D6867	D30	J1264	C33	Q7467	D13	R3054	C18	R3288	C34	R3418	B62	R3528	D5	R3834	B27	R3942A	B72	SG1701	C48
C2211	C11	C2405	C62	C2623	B44	C2812	E60	C2931	A83	D6868	D30	J1265	A33	Q7470	E3	R3055	D18	R3289	B20	R3419	B62	R3530	D6	R3834A	C79	R3943	C54	SG1701	C48
C2217	C11	C2406	E5	C2624	C45	C2813	E60	C2932	B50	D6915	A51	L1	D8	Q7478	E14	R3056	C18	R3291	C41	R3421	E7	R3601	E43	R3835	B26	R3943A	B72	SG1704	D24
C2219	B11	C2407	A36	C2625	C45	C2814	E59	C2932A	A82	D6916	C51	L5040	B21	Q7480	E14	R3057	C18	R3292	C42	R3422	B63	R3602	E43	R3836	B27	R3944	C53	SG1705	C24
C2224	D14	C2408	B37	C2628	B43	C2815	D78	C2933	A82	D6926	C51	L5041	B21	Q7481	E5	R3058	C22	R3293	C41	R3423	E7	R3606	D45	R3836A	E79	R3944A	B73	SP1	A48
C2225	D14	C2409	B59	C2629	B43	C2816	D78	C2934	C59	D6928	C50	L5042	B21	Q7513	D17	R3059	B22	R3294	B20	R3425	B64	R3619	E44	R3839	C81	R3945	B71	SP2	B48
C2227	A34	C2411	E7	C2635	B42	C2817	D81	C2935	C60	D6929	C50	L5201	D47	Q7701	C46	R3061	B22	R3295	E19	R3426	B6	R3621	E44	R3840	D51	R3946	B71	SP1901	A50
C2233	D42	C2412	A37	C2636	E42	C2818	D81	C2936	A54	D6932	B50	L5202	E47	Q7704	C46	R3062	A20	R3296	E47	R3426	C63	R3665	A42	R3841	C28	R3947	D55	T5431	D10
C2239	B42	C2413	B64	C2637	D42	C2819	D78	C2936A	A83	D6938	A54	L5203	B36	Q7710	B46	R3064	E19	R3297	D47	R3427	A63	R3701	A46	R3842	C28	R3947A	B71	T5431	D50
C2244	C34	C2415	D63	C2638	E43	C2820	C79	C2937	A82	D6941	B53	L5204	C35	Q7711	C46	R3065	E19	R3301	B6	R3428	A65	R3702	B47	R3843	B28	R3948	A72	T5912	A53
C2245	B37	C2415A	E8	C2639	B43	C2821	C79	C2938	A54	D6942	B53	L5261	C3	Q7712	C45	R3066	A19	R3302	B7	R3429	A65	R3703	C45	R3844	B82	R3949	B73	TH3911	A51
C2248	D18	C2416	E8	C2640	B43	C2822	C78	C2939	A55	D6961	D54	L5262	D58	Q7751	D23	R3081	C18	R3305	B4	R3430	D9	R3704	C47	R3845	D52	R3950	B74	TU1225	B2
C2249	A34	C2417	B60	C2641	B43	C2823	E59	C2941	B53	D6971	D53	L5309	D2	Q7752	D23	R3082	C18	R3307	B7	R3430A	B65	R3705	C47	R3845A	B82	R3951	B74	TU1900	A70
C2261	C2	C2417A	D7	C2642	B43	C2824	E60	C2942	B54	D6973	C55	L5332	C59	Q7753	C23	R3083	C18	R3311	E1	R3432	D16	R3706	C46	R3849	B81	R3952	B74	V1010	B28
C2262	C2	C2419	E8	C2655	E44	C2825	B79	C2943	B56	D6986	B54	L5333	D1	Q7754	C23	R3084	E18	R3312	E1	R3434	D9	R3707	C46	R3853	B79	R3953	B9	X1057	A21
C2265	B2	C2420	D7	C2657	D60	C2826	B79	C2945	B60	D6991	B54	L5334	B10	Q7804	B38	R3085	A22	R3315	D2	R3434A	A65	R3708	B46	R3854	C37	R3955	B9	X1327	B12
C2266	B60	C2421	B63	C2662	B43	C2827	B79	C2961	D54	F1900	A49	L5401	B2	Q7805	B39	R3086	E18	R3316	B3	R3435	D12	R3709	B46	R3855	B35	R3957	C50	X1333	B10
C2271	C11	C2422	B63	C2663	A43	C2828	D58	C2962	D54	F1941	B53	L5402	B3	Q7806	B40	R3088	A18	R3324	B5	R3436	D12	R3710	B45	R3856	C35	R3957A	A74	X1630	E44
C2276	E15	C2422A	E16	C2664	A42	C2829	B81	C2963	C52	F1961	D54	L5406	E6	Q7807	B80	R3091	B18	R3327	B34	R3437	D11	R3711	A45	R3857	C35	R3958	C50	X1800	D80
C2280	E1	C2423	B63	C2665	A41	C2830	D52	C2964	D53	FB5860	E31	L5409	E7	Q7810	B81	R3092	D18	R3329	B13	R3437A	B65	R3712	D47	R3858	C35	R3958A	D35	X1801	D80
C2281	E2	C2424	B63	C2666	A42	C2830A	D59	C2966	C56	FB5861	C30	L5411	E7	Q7813	B80	R3092A	B18	R3330	B13	R3438	E13	R3713	C45	R3859	B36	R3959	D55	X1802	D78
C2282	E16	C2425	B63	C2667	A42	C2831	D52	C2967	D55	FB5920	A52	L5417	D8	Q7816	B36	R3093	D19	R3331	D1	R3438A	B65	R3715	D47	R3860	C36	R3961	D55	X1902	D35
C2284	D16	C2427	B64	C2675	E45	C2831A	B82	C2968	D55	FB5924	C51	L5421	B64	Q7817	C36	R3093A	B17	R3332	C59	R3439	E14	R3716	E47	R3861	A30	R3961A	D35	ZD6031	C17
C2286	B34	C2428	A63	C2676	E44	C2833	B81	C2969	E55	FB5936	A53	L5422	A64	Q7860	A30	R3094	B17	R3333	B10	R3440	E14	R3717	D45	R3862	B30	R3962	C54	ZD6201	C10
C2288	C34	C2429	B64	C2678	A43	C2834	C36	C2970	C50	FB5941	B53	L5425	B64	Q7861	A31	R3095	B17	R3335	B10	R3441	E15	R3719	E46	R3863	B30	R3962A	C37	ZD6202	C10
C2292	C41	C2430	B63	C2679	C60	C2835	C26	C2974	E54	FB5961	D53	L5426	B64	Q7862	C30	R3096	B17	R3339	B14	R3442	D16	R3720	D45	R3864	A30	R3963	C52	ZD6203	C10

## AUDIO SCHEMATIC



A

B

COMB FILTER SCHEMATIC

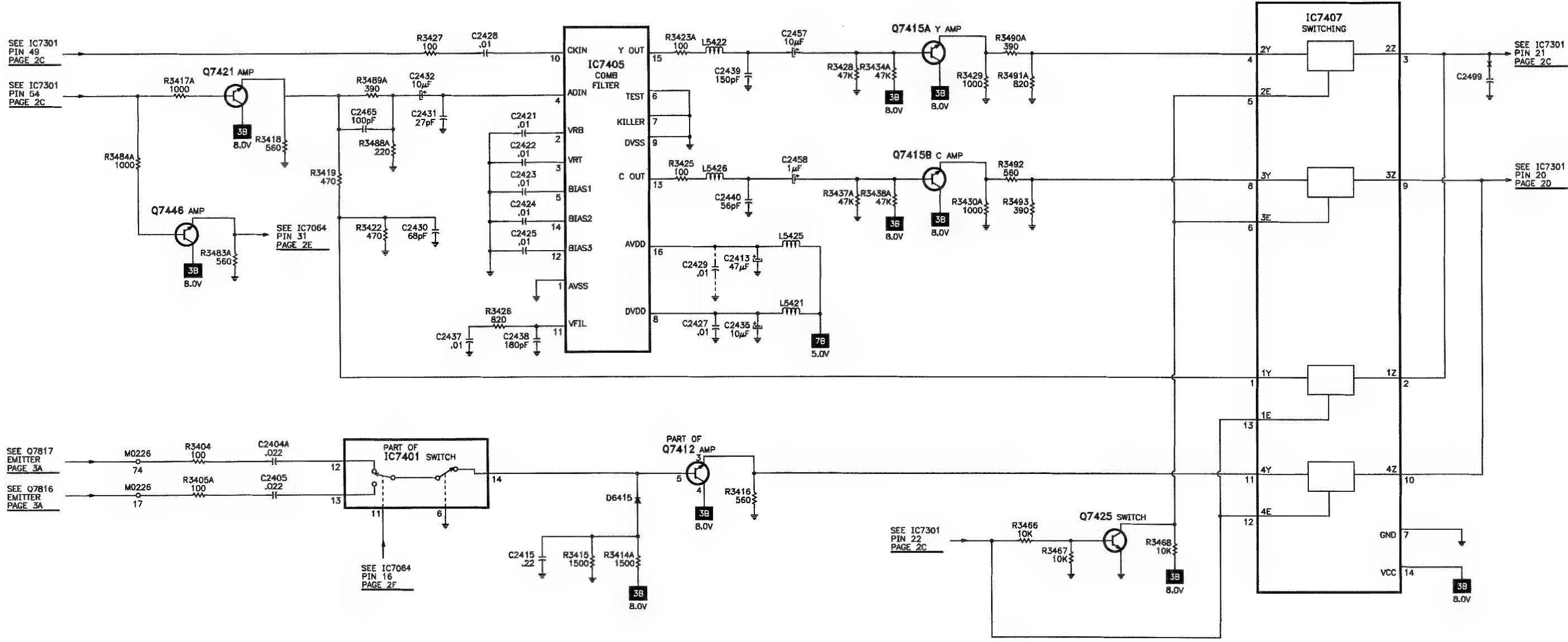
A

B

C

D

E



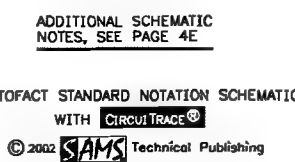
ADDITIONAL SCHEMATIC  
NOTES, SEE PAGE 4E



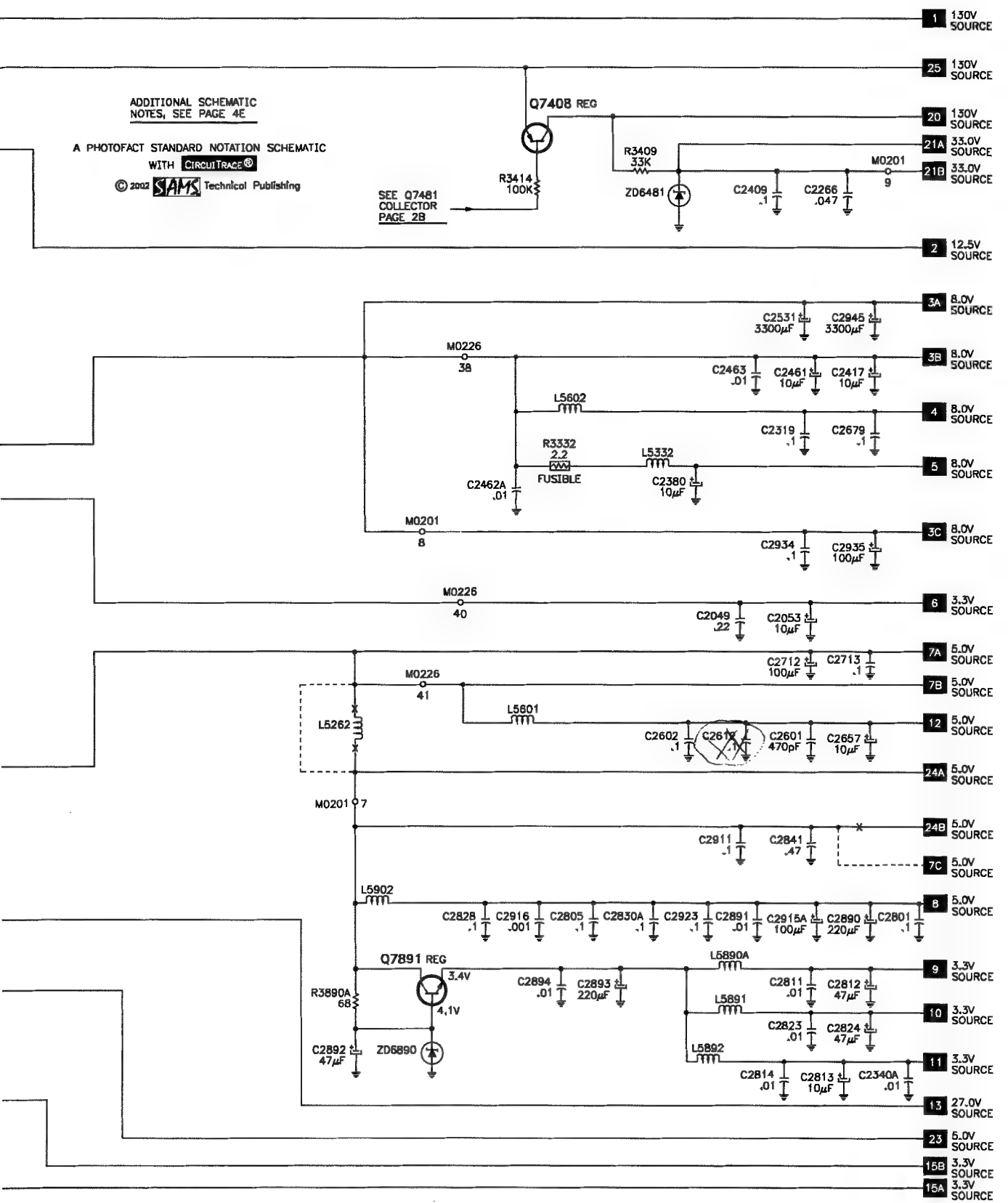
**F**



## H



G  
POWER SUPPLY SCHEMATIC continued

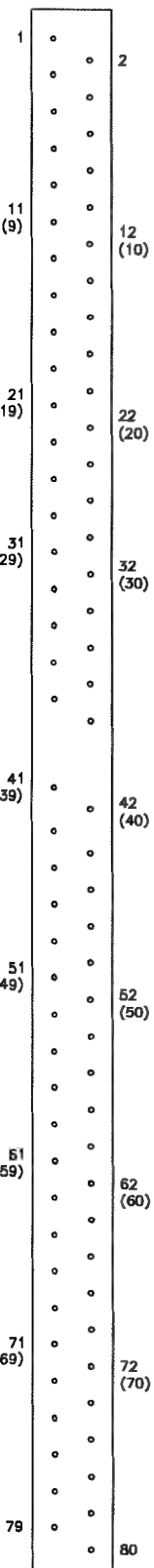


M0226 CONNECTOR INFORMATION

M0226 VOLTAGE CHART

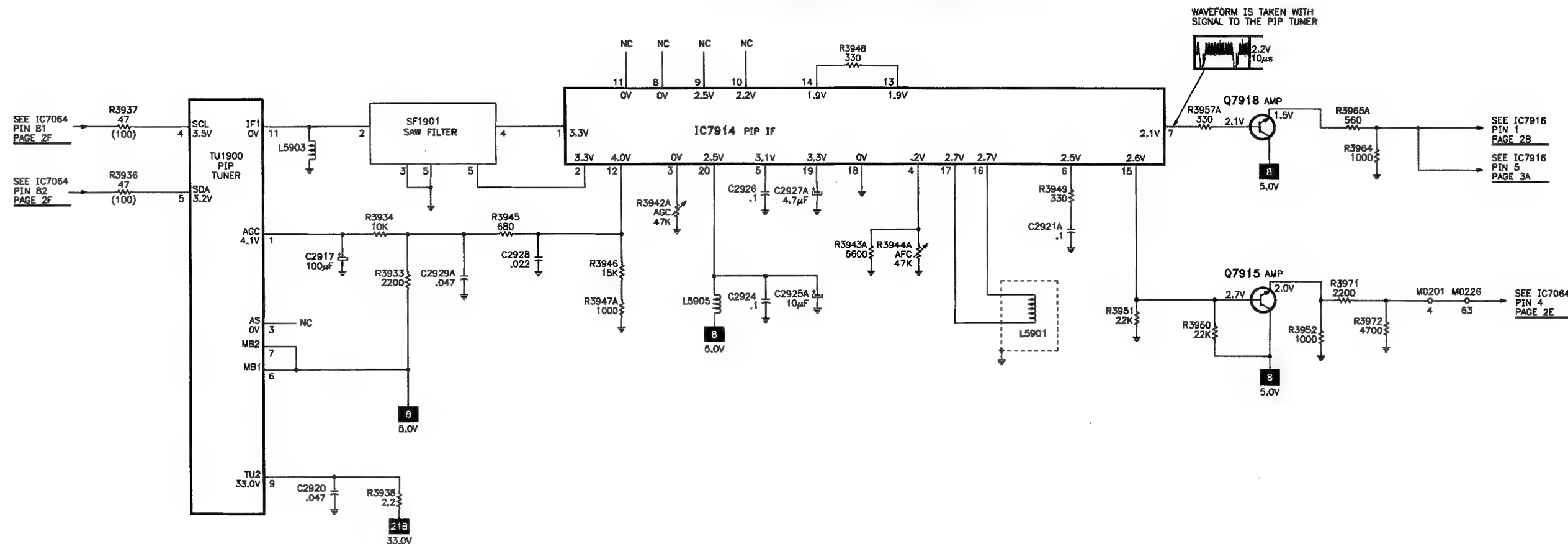
PIN	VOLTAGE	PIN	VOLTAGE
1	0V	41	4.9V
2	3.2V	42	2.0V
3	3.4V	43	3.2V
4	.1V	44	.17V
5	2.0V	45	2.1V
6	2.0V	46	2.4V
7	0V	47	3.1V
8	0V	48	2.2V
9	0V	49	.7V
10	0V	50	4.2V
11	0V	51	0V
12	0V	52	.85V
13	0V	53	.87V
14	0V	54	0V
15	0V	55	.5V
16	.08V	56	3.1V
17	4.3V	57	3.1V
18	4.3V	58	3.5V
19	3.2V	59	0V
20	0V	60	5.2V
21	0V	61	0V
22	0V	62	.5V
23	0V	63	2.5V
24	0V	64	0V
25	0V	65	2.0V
26	0V	66	2.0V
27	0V	67	0V
28	0V	68	0V
29	0V	69	0V
30	.04V	70	1.3V
31	0V	71	0V
32	.05V	72	1.8V
33	.1V	73	0V
34	3.4V	74	.15V
35	3.3V	75	.1V
36	4.9V	76	0V
37	0V	77	1.5V
38	8.2V	78	0V
39	0V	79	0V
40	3.3V	80	0V

M0226 TERMINAL GUIDE



NUMBERS MARKED ON THE BOTTOM OF THE BOARD ARE SHOWN IN (). ACTUAL NUMBERS ARE SHOWN WITHOUT ().

# PIP TUNER/IF SCHEMATIC



A PHOTOFAC STANDARD NOTATION SCHEMATIC  
WITH CIRCUITRACE®  
© 2002 SAMS Technical Publishing

## SCHEMATIC NOTES

- # For SAFETY use only equivalent replacement part, see parts list.
- Circuitry not used in some versions.
- Circuitry used in some versions.
- ⊥ Ground
- ⏏ Chassis ground
- ▽ Common tie point
- △ Taken from common tie point
- 3 Schematic CIRCUITRACE® Voltage source tie point.
- A— Cabling: Heavy lines reduce use of multiple lines.

Waveforms and voltages are taken from ground, unless otherwise noted.  
Waveforms taken with triggered scope and colorbar signal.  
Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.  
Supply voltages maintained as seen at input.  
Voltages measured with digital meter and a 1000µV RF signal, with colorbar pattern applied to antenna terminal.  
Controls adjusted for normal operation.  
Capacitors are 50 volts or less, 5% or greater unless noted.  
Electrolytic capacitors are 50 volts or less, 20% or greater unless noted.  
Resistors are 1/2W or less, 5% or greater unless noted.  
Value in ( ) used in some versions.  
Measurements with switching as shown unless noted.  
Noted voltage shown on zener diodes.

## MISCELLANEOUS ADJUSTMENTS

### B+ CHECK

Tune in a picture. Set picture and brightness to normal. Connect a digital voltmeter to L5559. Check for 129.0V ±1.0V.

### CONVERGENCE / PURITY

The deflection yoke is bonded to the CRT. Convergence and purity adjustments are not required.

### SERVICE ALIGNMENT MODE (SAM) INFORMATION

To enter Service Alignment Mode, turn the receiver on, then press 0, 6, 2, 5, 9, 6, and press the status button on the remote, without allowing time out between key entries. The first menu is the main menu, with four selections in the main menu.

At any time within the menus, pressing the menu button will display the main menu. If the exit item is selected, the receiver will display the previous menu.

Press menu button for next menu. Press adjust right/left to either turn selection on/off or to proceed to next menu. Press the adjust up/down to make a selection.

NOTE: Only four selections are displayed at a time. Use arrow up/down buttons for more.

#### A10US1 - 1.6 SAM

AKB	ON
VSD	OFF
M-LINK TEST	>
TUNER	>
WHITE TONE	>
GEOMETRY	>
SMART SETTING	>

NOTE: The following chart contains specific information to the TUNER selection on the main menu.

#### A10US1 - 1.6 SAM

AKB	ON	
VSD	OFF	
M-LINK TEST	>	
TUNER	>>>>>	IF-PLL Offset 31
WHITE TONE	>	AFW 250kHz
GEOMETRY	>	AGC 17
SMART SETTING	>	
	AFA	1
	AFB	0

NOTE: The following chart contains specific information to the SMART SETTING selection on the main menu. The four selections below will be displayed on the screen one at a time.

#### A10US1 - 1.6 SAM

AKB	ON				
VSD	OFF				
M-LINK TEST	>				
TUNER	>				
WHITE TONE	>				
GEOMETRY	>				
SMART SETTING	>>>>>	Movie	Sport	Weak	Multi
	BGT	49	50	50	40
	COL	34	34	28	46
	PIC	68	96	51	58
	SHP	60	60	30	45
	HUE	50	50	50	50

NOTE: The following chart contains specific information to the WHITE TONE selection on the main menu. Tune in a white raster pattern.

#### A10US1 - 1.6 SAM

AKB	ON				
VSD	OFF				
M-LINK TEST	>				
TUNER	>				
WHITE TONE	>>>>>	The items below will be displayed on the screen one at a time.			
GEOMETRY	>				
SMART SETTING	>	Delta Warm			
		Delta Cool			
		Normal			
		Normal >>>>>	Red	32	
			Green	34	
			Blue	33	
		Delta Cool >>>>>	Red	0	
			Green	-2	
			Blue	6	
		Delta Warm >>>>>	Red	0	
			Green	-6	
			Blue	-12	
		Cathode Dr >>>>>		9	

The following chart contains specific information to the GEOMETRY selection on the main menu. Tune in a crosshatch pattern.

#### A10US1 - 1.6 SAM

AKB	ON				
VSD	OFF				
M-LINK TEST	>				
TUNER	>				
WHITE TONE	>				
GEOMETRY	>>>>>	The items below will be displayed on the screen one at a time.			
VER-AMPL	25	Adjust for vertical height.			
VER-SLOPE	10	Adjust for vertical centering.			
SERV-BLK	Off	Service blanking / no vertical sweep 1 = On/0 = Off.			
HOR-SHIFT	35	Adjust for horizontal centering.			
HOR-BOW	40	Adjust for straight horizontal lines on top and bottom.			
HOR-PARA	26	Adjust for straight vertical lines on top and bottom.			
EW-WIDTH	40	Adjust for best horizontal width.			
EW-PARA	26	Adjust for straight vertical lines on both sides.			
EW-TRAP	5	Adjust for straight vertical lines at the middle.			
EW-UCORN	23	Adjust for straight vertical lines on upper corners.			
EW-LCORN	38	Adjust for straight vertical lines on lower corners.			
H60-WIDTH	13	Not used.			
H60-PARA	6	Not used.			
H60-SHIFT	13	Not used.			
V60-AMPL	4	Not used.			
VER-SCOR	26	Adjust for same size squares at top and bottom.			
VER-SHIFT	12	Adjust for vertical centering.			
VER-ZOOM	33	Adjust for vertical height.			
VER-SCOLL	31	Adjust for best vertical linearity.			

### SERVICE DEFAULT MODE (SDM) INFORMATION

To enter service default mode, turn the receiver on, then press 0, 6, 2, 5, 9, 6, and press the menu button on the remote, without allowing time out between key entries. When the status button is pressed the first two lines will be displayed on the screen, indicating the Run time, the Software ID number, and the most recent Errors that happened on the set.

### SERVICE ALIGNMENT MODE (SAM) INFORMATION

In the Service Alignment Mode, all the following information will be diplayed.

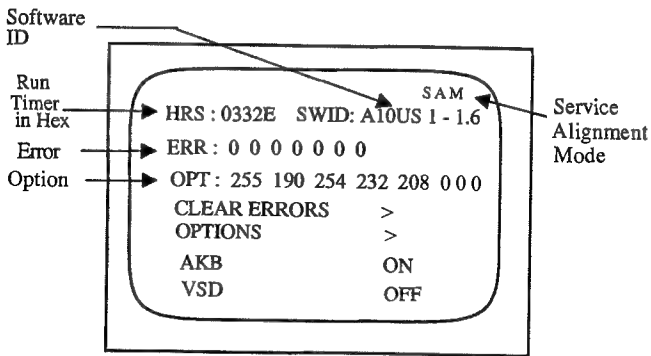
The first number (0332) is a run timer. The display will increment based on the amount of time the receiver has been on.

The second number (A10US1 - 1.6) is the software ID (A10), the software version (US) for the USA, and the cluster number (1) for English language, and (1.6) for the version number.

The letters SAM indicate that the Service Alignment Mode is active.

The next line shows the Option bytes of OB1 thru OB8.

The next line shows the error code number. The most recent errors will be displayed next to ERR. See table below for error codes information.



### ERROR CODES

No.	Description
0	No error.
1	X-Ray protection / EW protection / High beam current protect active.
2	Vertical protect active / IC7501, Check +13V, and -13V supply.
3	Reserved.
4	5V supply line is low or short circuit.
5	Reserved.
6	General I2C Bus error.
7	BC-Loop (RGB driving signals of BOCMA) not stabilized.
8	BOCMA (signal processor) I2C error IC7301 on SSB.
9	BOCMA (signal processor) 8V supply error,/ IC7301, R3331 on SSB.
10	NVM I2C error / IC7066.
11	NVM identification failure / IC7066.
12	u Processor internal RAM test failure / IC7064.
13	I2C error, Main Tuner error (PLL) / item 1225 - UV13xx
14	Sound processor I2C error / MSP3400 or MSB3410 does not respond.
15	SRAM (Static Random Access Memory) I2C error / IC7070.
16	PIP Tuner I2C error / IC1900.
17	PIP IC I2C error / IC7803, or Double Window IC SAB9081 I2C error.
18	I/O expander IC62320P I2C error / item 7910 on PIP panel.
19	Guide+ I2C error / IC LC27016B - item 7005.
20	V - Chip for PIP - I2C error.
21	NV clock - I2C error / IC MK41T56 - item 7011.
22	Reserved.
23	Second BOCMA (signal processor) IC I2C communication error / IC7301 (on Double Window PIP panel).

NOTE : I2C = (SCL/SDA).

### OPTION CODE AND STATUS

.When the Options item is selected a list of codes will be displayed. Each code represents one of the features of the set. Following will be either On or Off, indicating if that feature is active or not.

OPTION	OP	Value	On Set Value
SBNP	SBNP	OFF/ON	ON
CVI	CVI	OFF/ON	ON
C169	C169	OFF/ON	ON
E149	E149	OFF/ON	ON
SMCK	SMCK	OFF/ON	ON
AV3	AV3	OFF/ON	ON
CBFL	CBFL	OFF/ON	ON
IPX	IPX	OFF/ON	ON
IPMU	IPMU	OFF/ON	ON
VDBY	VDBY	OFF/ON	OFF
PLST	PLST	OFF/ON	ON
SOSD	SOSD	OFF/ON	ON
BLMU	BLMU	OFF/ON	ON
PIPC	PIPC	OFF/ON	ON
PIPT	PIPT	OFF/ON	ON
VSCL	VSCL	OFF/ON	OFF
MLNK	MLNK	OFF/ON	ON
SURF	SURF	OFF/ON	ON
CCAP	CCAP	OFF/ON	ON
DNRM	DNRM	OFF/ON	ON
VMUT	VMUT	OFF/ON	ON
TIME	TIME	OFF/ON	ON
AAVL	AAVL	OFF/ON	ON
FUNN	FUNN	OFF/ON	OFF
SPKC	SPKC	OFF/ON	ON
VCBK	VCBK	OFF/ON	ON
VBNR	VBNR	OFF/ON	ON
USRC	USRC	OFF/ON	OFF
BNUM	BNUM	OFF/ON	ON
ROTI	ROTI	OFF/ON	OFF
SN1C	SN1C	OFF/ON	OFF
TMWIN	TMWIN	OFF/ON	OFF
AOUT	AOUT	OFF/ON	ON
INCF	INCF	OFF/ON	ON
APC	APC	OFF/ON	OFF
NVM	NVM	OFF/ON	ON

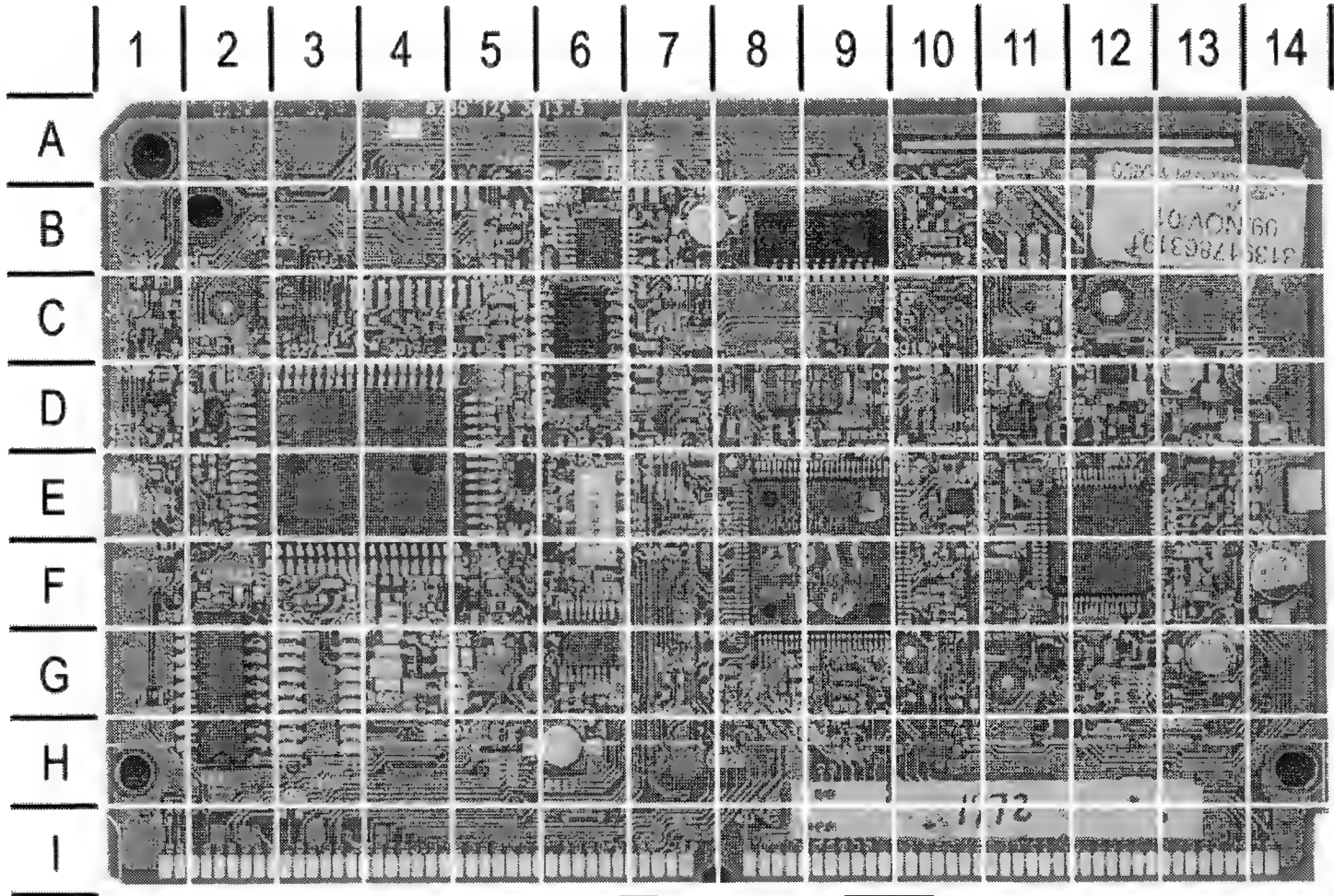
NOTE: Option Byte 1 through 8 are to be set at the factory for feature listing for each chassis. Each can be set to value 0 - 255. The first eight features are the total value of Option Byte 1, the next eight features are the total value of Option Byte 2, and so on. Option Bytes 6, 7, and 8 values are reserved. Changing any feature setting will change the value of the related option.

WARNING: Before making changes to any value, record On Set Value for all the options.

Option Byte 1	OB1	255
Option Byte 2	OB2	190
Option Byte 3	OB3	254
Option Byte 4	OB4	232
Option Byte 5	OB5	208
Option Byte 6	OB6	0
Option Byte 7	OB7	0
Option Byte 8	OB8	0



SMALL SIGNAL BOARD - TOP VIEW

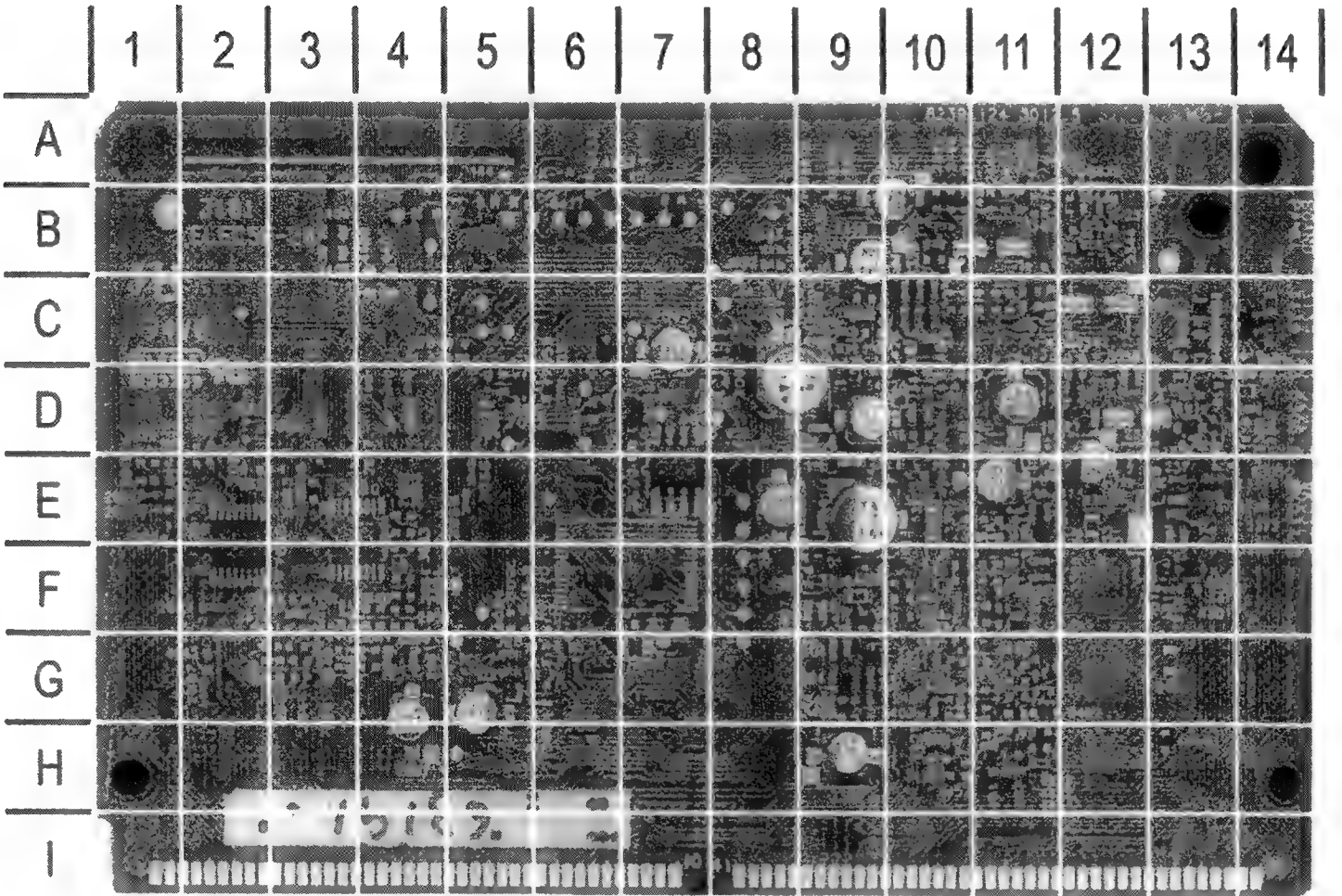


A SAMS Technical Publishing GRIDTRACE™ PHOTO

SMALL SIGNAL BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

C2010	G8	C2381	E6	C2623	D14	IC7301	E3	Q7425	B6	R3045	H10	R3385	H5
C2014	F10	C2401	G6	C2624	E13	IC7401	G6	Q7442	A5	R3046	G9	R3388	D1
C2015	F10	C2417	H6	C2625	F14	IC7405	D6	R3003	D9	R3051	F10	R3401A	G6
C2016	F10	C2421	D7	C2628	D13	IC7407	B6	R3004	D9	R3054	D9	R3413	F5
C2017	E10	C2422	D7	C2629	D13	IC7651	F11	R3008	G9	R3058	D10	R3414A	F5
C2041	D8	C2423	C7	C2636	D12	L5040	E10	R3009	G7	R3059	E10	R3415	F5
C2042	D8	C2424	D5	C2638	D12	L5042	D7	R3013	G9	R3061	D10	R3417A	C1
C2045	E7	C2425	C5	C2639	D11	L5309	F5	R3014	G9	R3062	H9	R3418	C1
C2046	E7	C2427	C7	C2640	D12	L5332	E5	R3015	G9	R3064	E7	R3425	C5
C2050	D8	C2428	C5	C2641	D11	L5333	D2	R3017	E7	R3066	D7	R3426	C5
C2051	D9	C2437	C5	C2655	E13	L5334	E6	R3018	F7	R3084	E7	R3466	B7
C2053	G5	C2438	C5	C2662	D11	L5421	D6	R3019	F7	R3085	F7	R3467	B6
C2301	D5	C2461	B7	C2663	E11	L5601	G11	R3021	H9	R3086	D7	R3468	B6
C2306	C7	C2462A	B7	C2665	E11	L5602	H11	R3022	G8	R3088	D7	R3477	B5
C2309	F5	C2463	B7	C2667	E11	L5625	D12	R3023	F7	R3307	F5	R3601	G12
C2311	B5	C2499	B6	C2675	E11	L5665	D11	R3024	G9	R3316	F3	R3602	G12
C2316	F3	C2601	G11	C2676	F11	M0205	B9	R3030	C10	R3331	D1	R3606	G12
C2317	D5	C2602	G12	D6031	D8	M0226	I14	R3031	F10	R3333	D6	SF1451	H2
C2319	E5	C2606	G13	D6302	F1	Q7307	E5	R3034	G8	R3335	F6	X1057	D8
C2327	C2	C2607	G12	D6412	G5	Q7331	D5	R3035	F10	R3348	C5	X1327	C3
C2328	D2	C2612	F13	D6415	F6	Q7368	D1	R3042	D10	R3364	D1	X1333	E6
C2333	D2	C2613	F13	D6605	G12	Q7412	F5	R3043	E10	R3374	E2	X1630	F11
C2350	D11	C2619	E13	IC7064	F8	Q7421	C1	R3044	D9	R3384	H5		

SMALL SIGNAL BOARD - BOTTOM VIEW



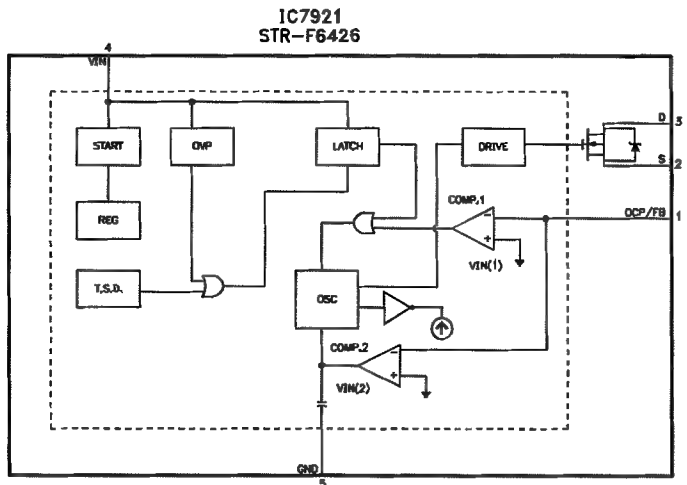
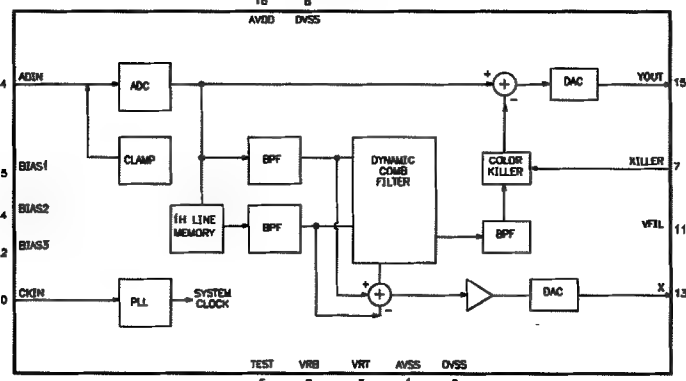
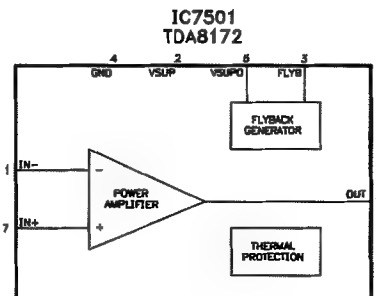
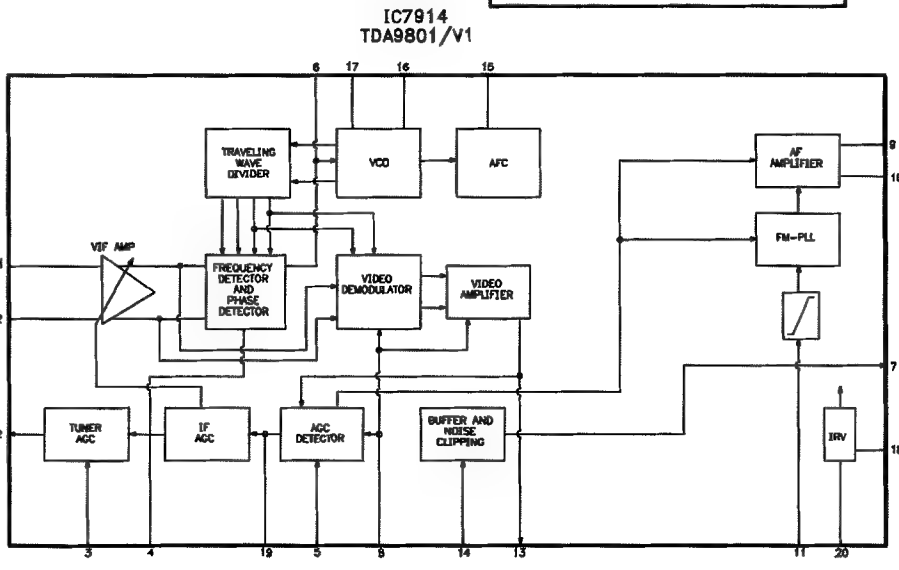
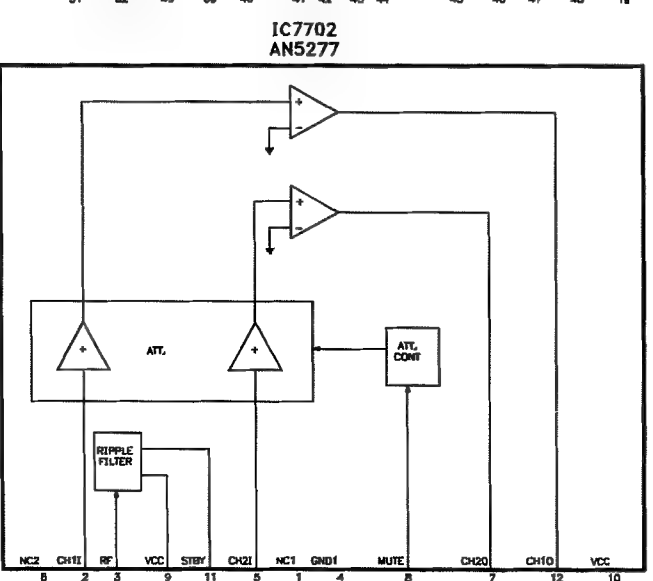
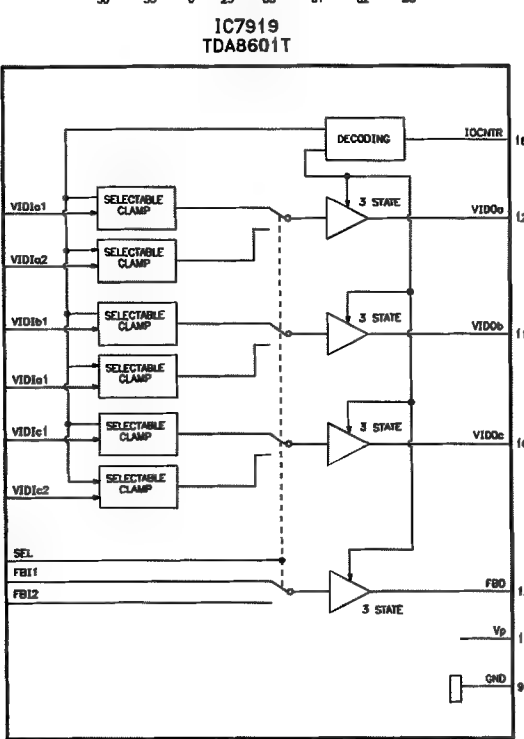
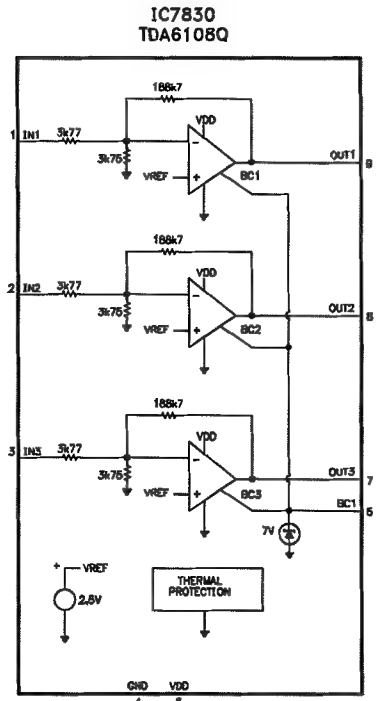
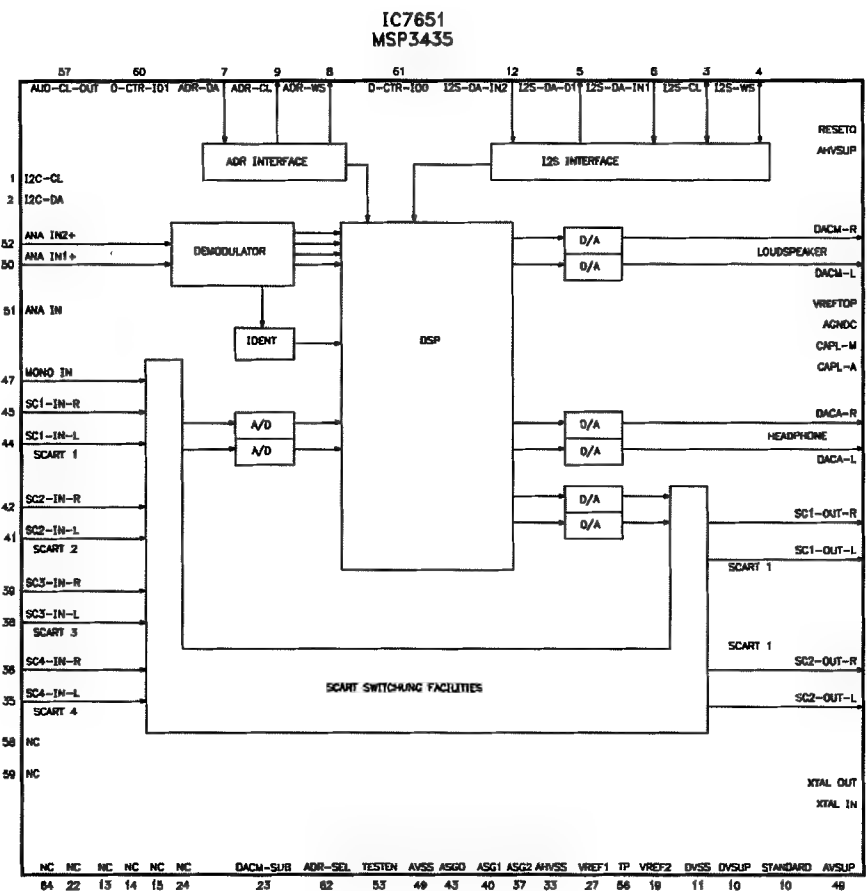
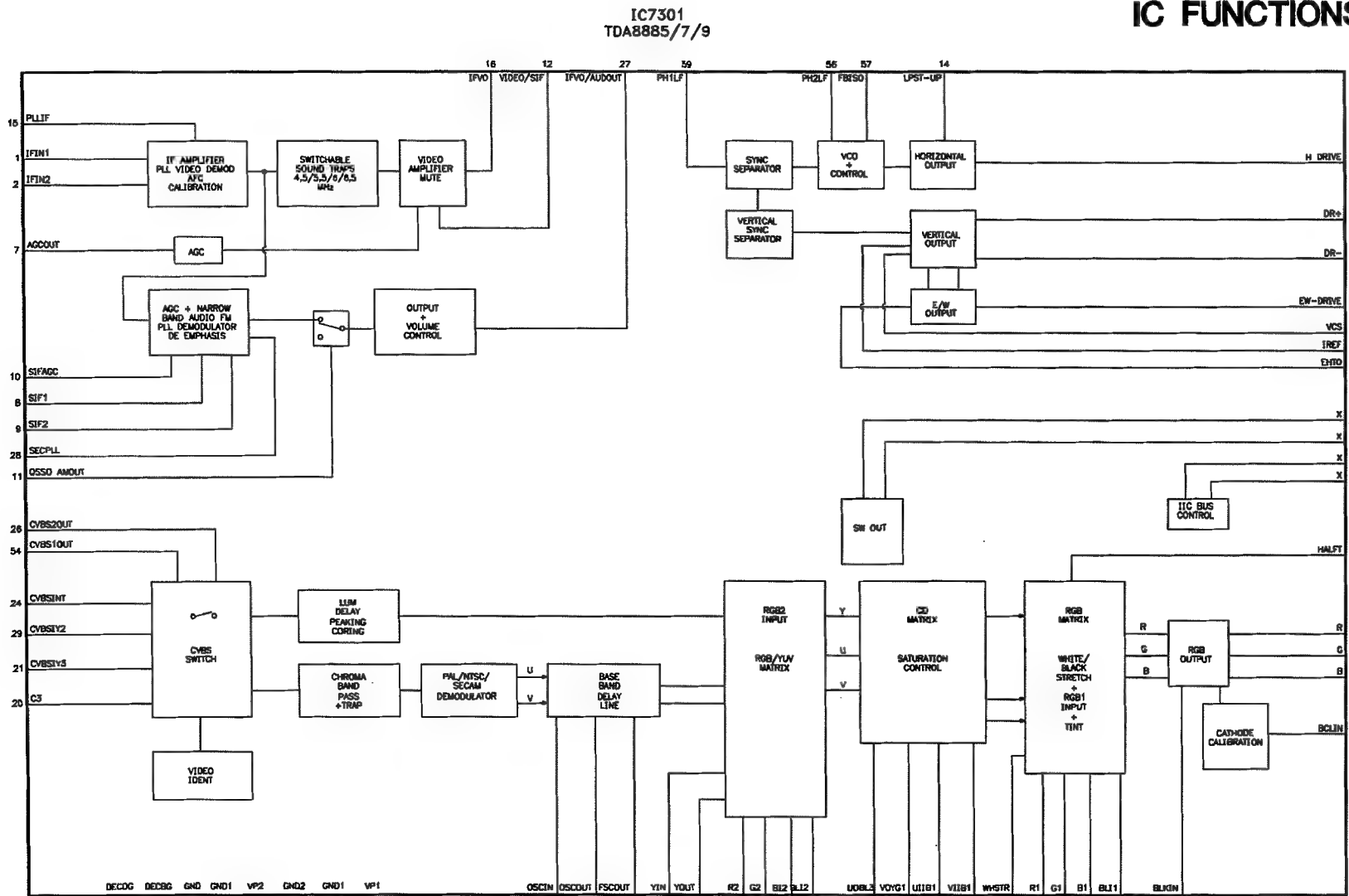
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SMALL SIGNAL BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

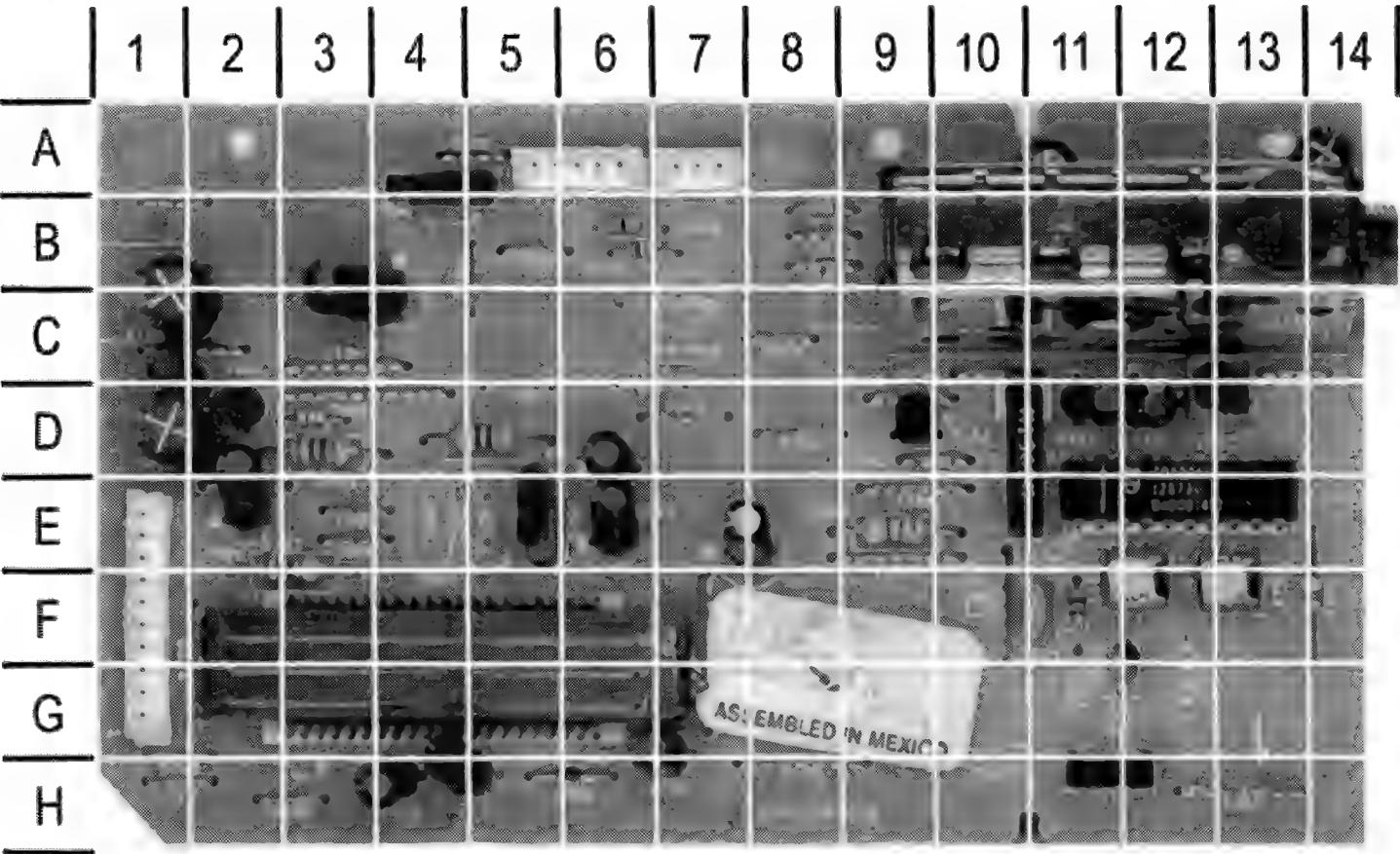
C2018	D5	C2356	D12	C2457	D9	L5041	D7	R3312	F13	R3381	D12	R3438A	B9
C2043	C7	C2357	D12	C2458	B9	L5401	H10	R3315	E12	R3382	D12	R3483A	C14
C2049	D7	C2373	E12	C2465	D14	L5422	D9	R3324	E11	R3383	D11	R3484A	C14
C2302	F11	C2374	E13	C2620	D1	L5425	E9	R3327	G10	R3387	C10	R3488A	B10
C2303	F11	C2375	E13	C2621	E1	L5426	C10	R3329	F11	R3393	E12	R3489A	B10
C2312	F13	C2376	E13	C2635	D2	Q7053A	D5	R3330	F10	R3394	E12	R3490A	C9
C2313	F10	C2377	E13	C2637	D3	Q7063	C6	R3332	E10	R3397	E9	R3491A	C9
C2314	E12	C2380	E11	C2642	G3	Q7415A	C8	R3339	E10	R3402A	G9	R3492	B8
C2321	E11	C2382	D8	C2657	H4	Q7446	C14	R3340	E10	R3403A	G9	R3493	B8
C2322	H9	C2402	G9	C2661	G4	R3002	G5	R3341	D10	R3404	G9	R3619	E1
C2323	C10	C2403	G9	C2664	D4	R3007	G5	R3344	D12	R3405A	F9	R3621	E1
C2324	E11	C2404A	G9	C2666	D4	R3055	E5	R3358	D12	R3411A	G9	R3665	D4
C2325	C10	C2405	G9	C2678	G2	R3056	E5	R3361	C10	R3412A	F9	C2372	E12
C2326	C10	C2407	F9	C2679	F3	R3057	D6	R3362	C10	R3416	F9		
C2332	D12	C2408	F9	C2682	D3	R3065	D8	R3363	C10	R3419	B9		
C2334	D13	C2413	E9	C2683	E3	R3081	D6	R3365	D14	R3422	B9		
C2335	D11	C2430	B9	C2684	F2	R3082	C8	R3371	E12	R3423A	C9		
C2338	E13	C2431	C9	C2685	D2	R3083	B8	R3372	F10	R3427	C11		
C2342	D10	C2432	B10	C2686	E1	R3092	C5	R3373	E13	R3428	C9		
C2345	D12	C2435	E8	C2687	G2	R3301	E10	R3375	E13	R3429	C9		
C2348	D14	C2439	D10	D6303	F13	R3302	E11	R3376	E13	R3430A	C8		
C2354	D11	C2440	D9	IC7066	E7	R3305	F12	R3377	E13	R3434A	C9		
C2355	D12	C2453	G10	IC7630	E2	R3311	F12	R3378	E13	R3437A	B8		



IC FUNCTIONS



PIP BOARD - TOP VIEW

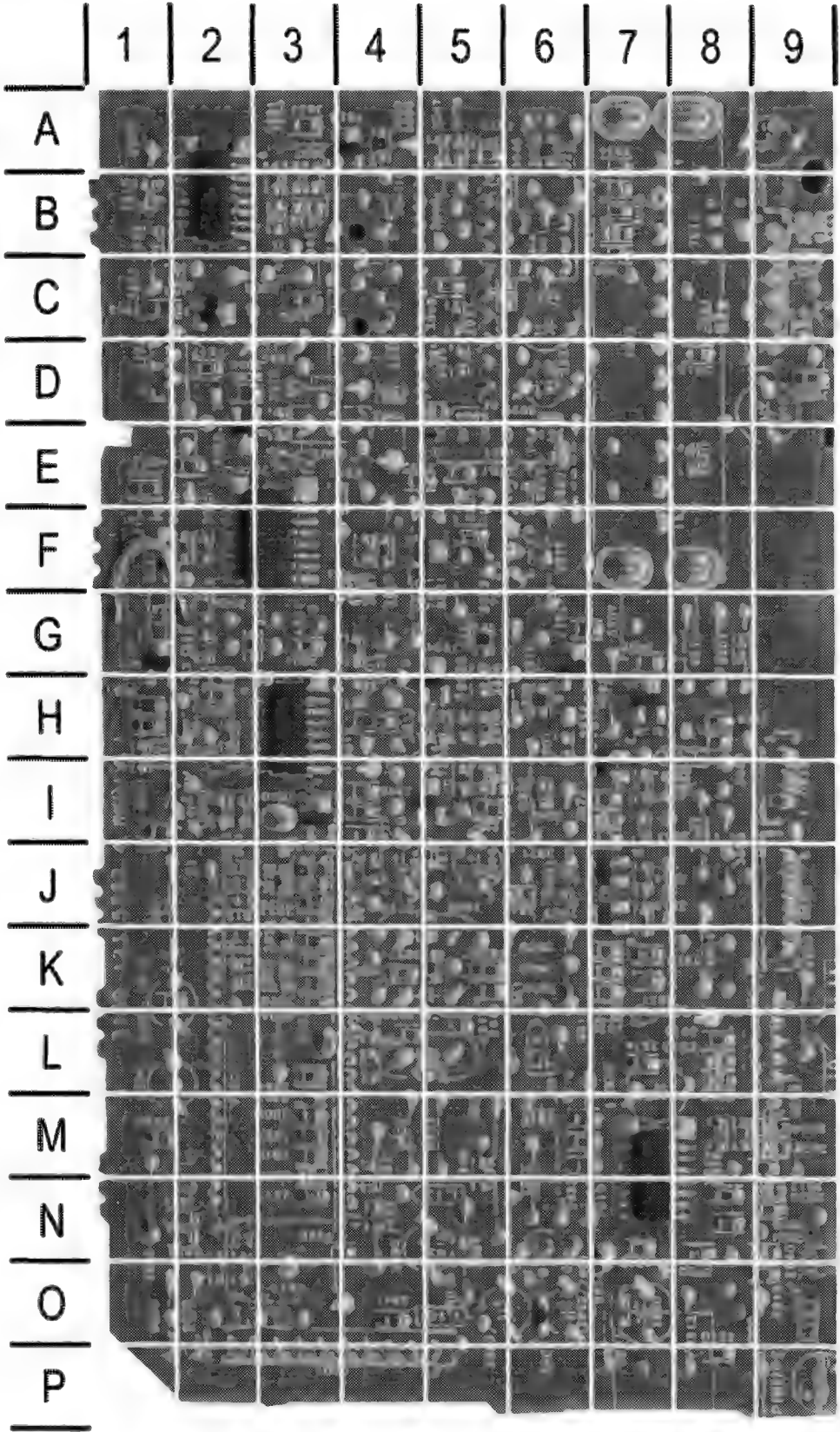


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PIP - TOP VIEW, GRIDTRACE LOCATION GUIDE

C2803	G6	C2925A	D11	M0200	A5	R3944A	F13
C2804	H4	C2927A	D12	M0201	G1	SF1901	D10
C2806	E7	C2935	B3	M0205	A4	TU1900	B12
C2808	D6	D6801	H6	M0214	D4	X1802	E5
C2812	D2	IC7803	G3	M0236	A7	X1902	F11
C2813	H4	IC7914	E11	M0272	H12		
C2824	E6	L5906	F11	Q7891	D2		
C2890	C1	L5890	E3	Q7912	D9		
C2892	C1	L5891	D5	R3857	B6		
C2893	D1	L5892	D3	R3858	B6		
C2895	F12	L5901	D13	R3890A	D3		
C2915	A11	L5902	E9	R3938	B8		
C2917	A14	L5905	F14	R3942A	F12		

PIP BOARD - BOTTOM VIEW



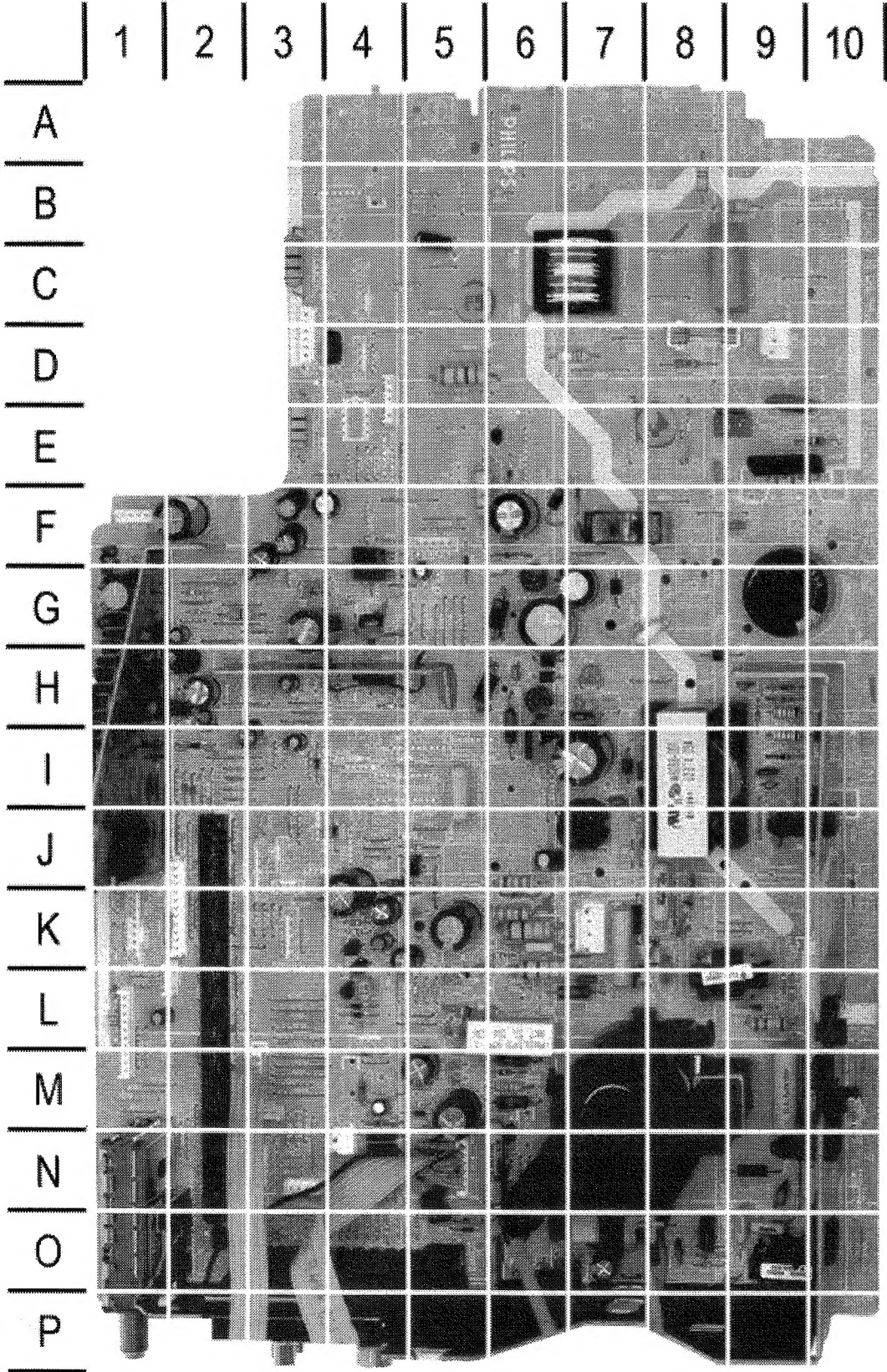
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PIP BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

C2801	H4	R3814	H5
C2805	H5	R3815	I5
C2807	I5	R3816	I4
C2809	M3	R3817	I5
C2810	M3	R3818	I4
C2811	N3	R3819	J5
C2814	K2	R3820	J3
C2815	J2	R3821	N4
C2816	J2	R3822	M3
C2817	L5	R3823	M3
C2818	K5	R3824	L3
C2819	J5	R3825	L4
C2820	K3	R3826	K4
C2821	K3	R3827	K5
C2822	K3	R3828	K3
C2823	J3	R3829	K3
C2825	J4	R3830	J3
C2826	J3	R3831A	J3
C2827	I4	R3832A	O2
C2828	L7	R3833A	N2
C2829	K7	R3834A	N2
C2830A	H5	R3836A	K1
C2831A	K7	R3839	K7
C2832	I6	R3844	J7
C2833	I7	R3845A	J7
C2834	H6	R3849	I7
C2836A	H5	R3853	L4
C2837	N4	R3854	I2
C2840A	M1	R3855	H8
C2841	O4	R3856	H8
C2891	O7	R3859	H6
C2894	N5	R3860	G5
C2911	F4	R3864A	N3
C2916	D8	R3866A	M5
C2920	E8	R3870A	K7
C2921A	C5	R3871A	I7
C2923	B1	R3872A	I7
C2924	D6	R3920	E1
C2926	D5	R3921	F1
C2928	A5	R3922	F1
C2929A	B7	R3923A	F2
C2930	N8	R3924A	G2
C2931	N8	R3925A	F2
C2932A	M6	R3926A	F4
C2933	M6	R3927	F4
C2934	L7	R3930	F5
C2937	M8	R3931A	E6
IC7801	H3	R3933	B7
IC7910	F3	R3934	A7
IC7916	B2	R3936	A6
IC7919	M7	R3937	A3
L5903	E6	R3943A	C3
Q7804	H5	R3945	A5
Q7805	I5	R3946	B5
Q7806	I3	R3947A	A5
Q7807	J7	R3948	B6
Q7810	J7	R3949	C5
Q7813	I7	R3950	A4
Q7816	H7	R3951	H1
Q7817	G6	R3952	H1
Q7911	F5	R3953	C2
Q7915	G1	R3957A	B3
Q7917	C2	R3958A	D2
Q7918	A4	R3961A	E5
Q7920	E2	R3962A	G2
R3801	H2	R3964	B3
R3802	H2	R3965A	B3
R3805	G2	R3968A	D9
R3806	G7		
R3807	G6		
R3812	H4		
R3813	H4		



LARGE SIGNAL BOARD - TOP VIEW



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LARGE SIGNAL BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

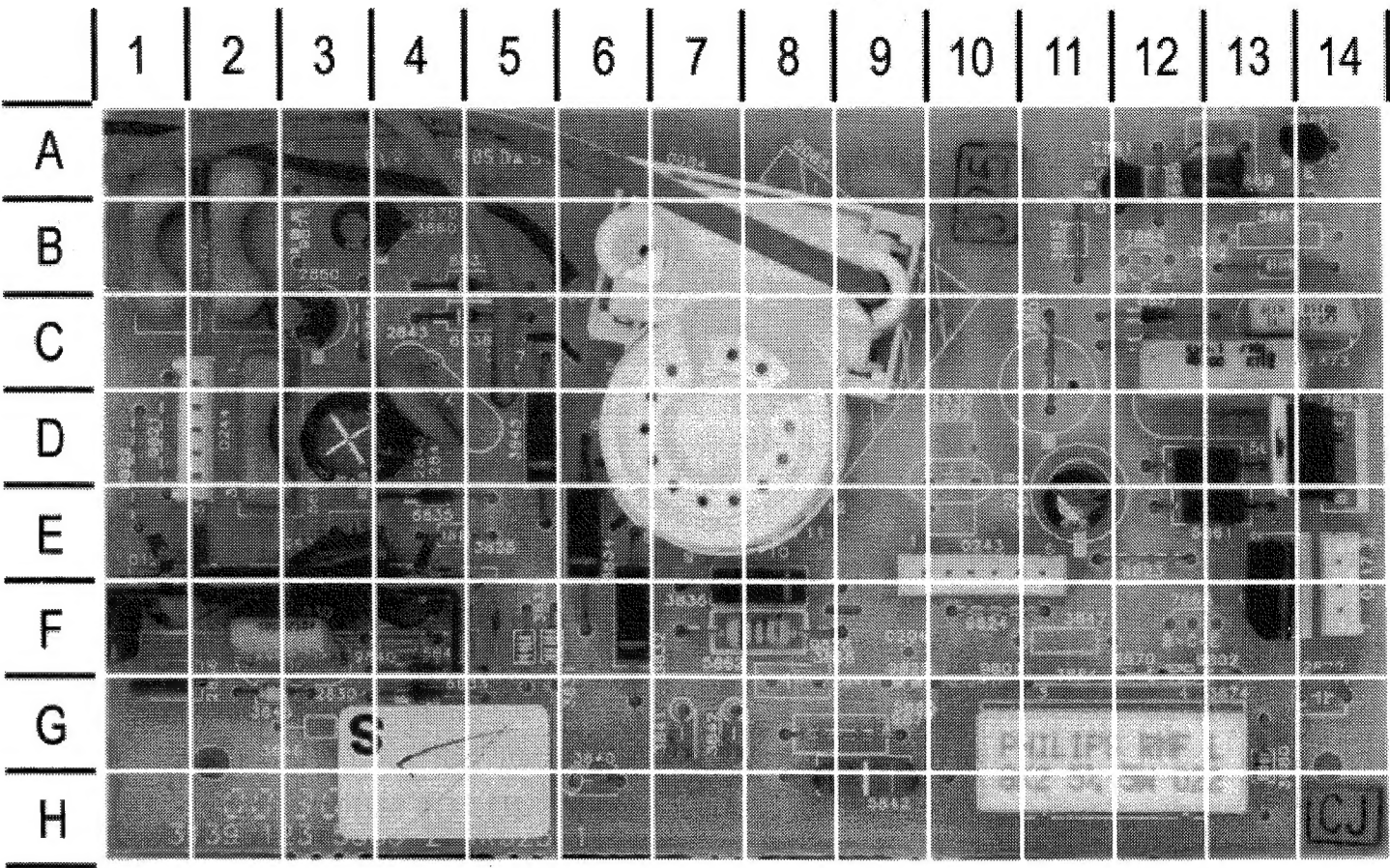
C2224	O2	C2929	G8	FB5971	G7	R3206	O3	R3490	N10
C2261	N1	C2936	I7	IC7501	O6	R3208	O4	R3491	N10
C2265	O1	C2938	H7	IC7702	H1	R3211	O4	R3504	M4
C2271	L1	C2939	I7	IC7921	J10	R3212	O3	R3511	M5
C2284	I3	C2941	F6	IC7929	K10	R3216	O4	R3521	O6
C2404	O9	C2942	G6	IC7942	G4	R3217	O3	R3522	M4
C2406	O9	C2943	F6	IC7967	H4	R3218	O4	R3523	N5
C2409	O5	C2945	G3	IC7968	F4	R3219	O3	R3524	N5
C2411	N9	C2961	H6	IC7971	I6	R3223	O3	R3526	N5
C2415A	K7	C2962	G6	J1262	P3	R3226	O4	R3527	N5
C2416	L8	C2964	F7	J1264	P6	R3227	N4	R3528	N5
C2417A	K6	C2966	H3	L5201	I2	R3233	O4	R3530	N5
C2419	I5	C2967	I3	L5202	I2	R3238	O4	R3704	H1
C2420	J6	C2969	G5	L5262	L1	R3242	O5	R3727	G2
C2430A	L7	C2970	H9	L5406	O9	R3249	N4	R3732	G2
C2434	K5	C2974	G7	L5409	K7	R3278	J3	R3736	G3
C2437A	N6	C2977	B5	L5411	N9	R3401	O8	R3737	G3
C2439A	L4	D6413	I3	L5417	J7	R3402	O9	R3901	B9
C2445	M5	D6414	K8	L5430	L7	R3403	O8	R3902	B8
C2447	K4	D6419	K6	L5445	M6	R3405	L6	R3913	E10
C2449	M5	D6420	K5	L5446	M6	R3409	O5	R3923	H9
C2462	K4	D6439	L4	L5448	M6	R3410	N10	R3924	I9
C2471	M9	D6440	L4	L5475	L9	R3411	K6	R3925	H10
C2473	M10	D6442	J4	L5521	O7	R3412	K6	R3926	G10
C2474	J8	D6445	M6	L5523	N4	R3414	N6	R3928	H9
C2478	K4	D6447	L5	L5524	N4	R3417	K7	R3943	G4
C2484	O9	D6448	L5	L5939	H6	R3421	J6	R3944	B6
C2485	O8	D6461	K5	LC5902	C7	R3423	K6	R3961	D5
C2505	O8	D6474	K8	M0200	N4	R3430	K6	R3967	H4
C2506	O7	D6480	J4	M0201	L1	R3434	L6	R3969	H4
C2521	O6	D6505	O7	M0207	N3	R3435	N5	R3970	F5
C2522	M4	D6511	M5	M0211	E9	R3436	N6	R3991	F5
C2523	O6	D6512	M4	M0212	D9	R3437	L5	R3996	D7
C2524	N5	D6522	M4	M0215	D4	R3439	L4	RY1931	F7
C2531	K4	D6701	I2	M0221	K7	R3441	K4	SP1901	D8
C2701	G2	D6915	E9	M0222	N4	R3445	M5	T5431	M7
C2702	H2	D6916	J9	M0224	D3	R3446	L5	T5912	I8
C2703	H2	D6926	I9	M0226	J2	R3447	L5	TH3911	D9
C2704	F2	D6928	H9	M0236	L2	R3448	M5	TU1225	O1
C2705	H1	D6929	H9	M0240	K2	R3449	L5	ZD6464	J5
C2707	H2	D6932	F7	M0241	N5	R3450	L5	ZD6472	L9
C2708	H2	D6938	H7	M0242	M3	R3452	I4	ZD6481	O5
C2709	G1	D6941	G6	M0246	F1	R3470	M10	ZD6921	J10
C2712	F3	D6942	F6	M0272	M3	R3471	L9	ZD6966	E6
C2715	F3	D6961	H5	Q7408	N6	R3472	L9		
C2718	F3	D6971	F6	Q7410	O10	R3473	M10		
C2726	F3	D6973	G4	Q7440	L4	R3476	M10		
C2733	G3	D6986	F5	Q7464	J5	R3477A	J7		
C2902	C9	D6991	F5	Q7470	M10	R3478	K4		
C2908	F9	F1900	D8	Q7478	K4	R3479	K4		
C2909	E8	F1941	G6	Q7480	K4	R3480	K4		
C2915	G9	F1961	H6	Q7481	O8	R3481	J5		
C2919	J10	FB5920	H8	Q7965	E6	R3482	J4		
C2921	I10	FB5924	I10	R3039	C3	R3483	K4		
C2922	J9	FB5936	I7	R3040	E3	R3487	J5		
C2925	I9	FB5941	H6	R3201	O3	R3488	L5		
C2927	I9	FB5961	H6	R3203	N4	R3489	L9		

PARTS LIST continued

Item No.	Function/Rating	Mfr. Part No.	Notes
R3942A	47K AGC	2120 363 90166	-
R3944A	47K AFC	2120 363 90166	-
RM1002	Receiver	9322 127 54667	Remote
# RY1931	Relay	2422 132 07444	Degaussing
S1000	Switch	2422 128 02742	Power
S1091	Switch	2422 128 02742	Channel Up
S1092	Switch	2422 128 02742	Channel Down
S1093	Switch	2422 128 02742	Volume Up
S1094	Switch	2422 128 02742	Volume Down
SF1451	Filter	2422 549 44377	SAW
SF1901	Filter	2422 549 43074	SAW
SP1, SP2	Speaker	3139 128 76071	2 1/4" X 5", 16 Ohms, 5W
SP1901	Surge Protector	2422 549 43073	-
# T5431 (2)	Horizontal Output	3128 138 21011	-
# T5912	Power	2422 531 02374	-
TH3911	3.3 Cold PTC	2120 661 00025	-
TU1225	Tuner	2422 542 90057	-
TU1900	Tuner	2422 542 90057	-
# V1010	CRT	9322 142 09682	A68QCP891X001
X1057	Crystal	2422 543 01095	12MHz
X1327	Crystal	2422 543 01095	12MHz
X1333	Trap	2422 549 44043	4.5MHz
X1630	Crystal	2422 543 01059	18.432MHz
X1800	Crystal	-	-
X1801	Crystal	-	-
X1802	Crystal	2422 543 00904	14.31818MHz
X1902	Filter	2422 549 40807	4.5MHz
	Fuse Holder	3122 358 71251	For F1900 (2 Used)
	PC Board	3139 178 89311	CRT
	PC Board	3139 178 65661	Front Interface Panel
	PC Board	3139 178 88281	Large Signal
	PC Board	3139 178 89081	M-Link
	PC Board	3139 178 59401	PIP
	PC Board	3139 178 67911	Side Control Panel
	PC Board	3139 178 63191	Small Signal
	PC Board	3139 178 82271	Top Control Panel
	Transmitter	3139 128 76191	Remote

# For SAFETY use only equivalent replacement part.  
(1) Bonded part of CRT.  
(2) Screen and focus controls are part of T5431.

CRT BOARD



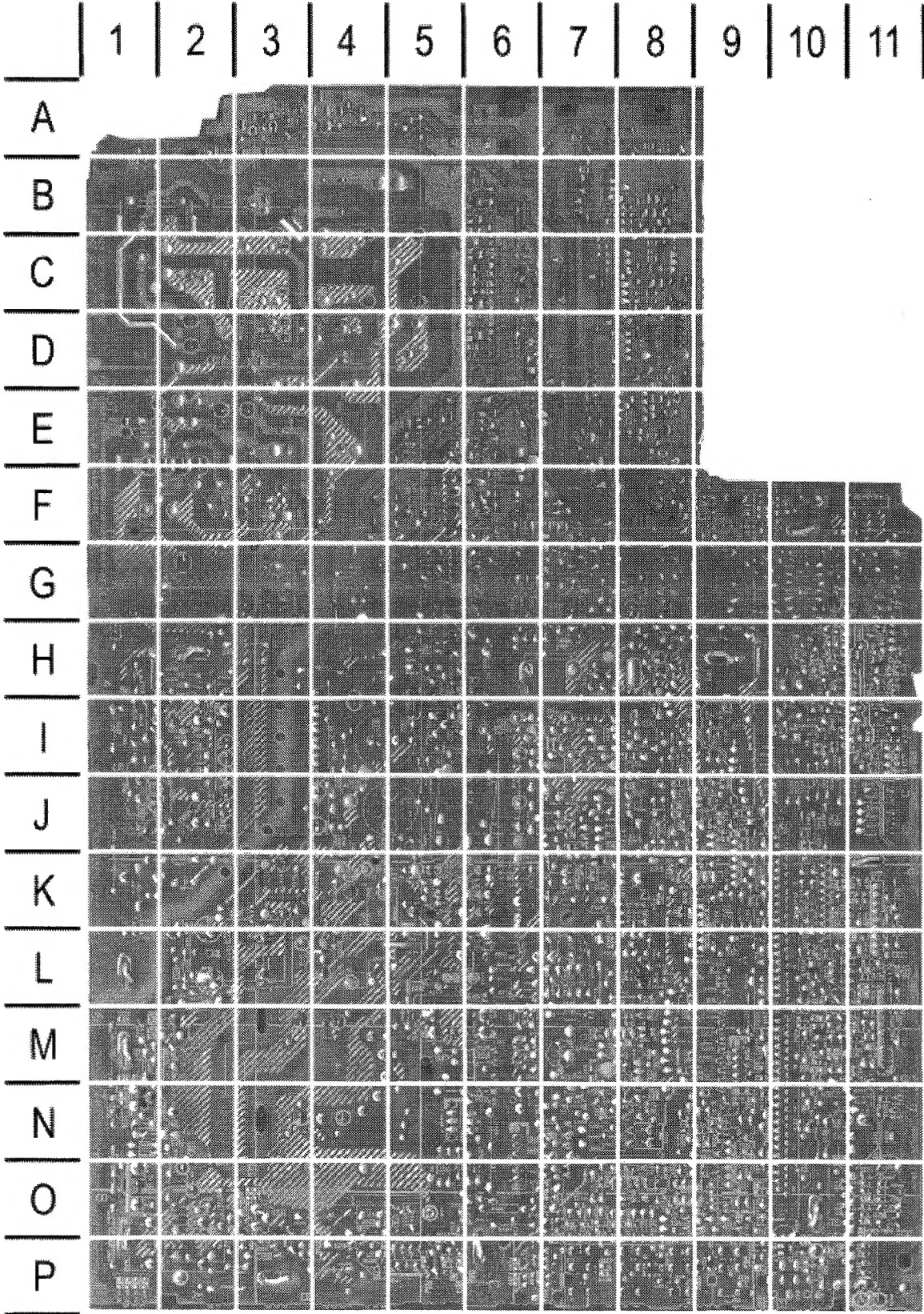
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CRT BOARD, GRIDTRACE LOCATION GUIDE

C2830	F2	C2872	G14	L5862	F8	R3840	H6	R3875*	B13
C2831	E3	C2873	C14	L5886	B1	R3841	G7	R3876*	B13
C2835*	E2	C2874*	E12	L5888	B2	R3842	G7	R3877*	B13
C2836	G1	C2876	B3	L5890A	D2	R3843	D5	R3878*	D12
C2840	D3	D6831	G4	M0217	F14	R3845	G2	R3880	G13
C2843	C4	D6832*	E2	M0243	E9	R3861*	A1	R3882	B13
C2860	C3	D6833	F4	M0244	C2	R3862*	A2	R3886*	B1
C2861*	D2	D6835	E4	Q7860	A14	R3863*	D2	R3888*	B2
C2862*	A2	D6861*	C4	Q7861	A12	R3864*	A14	R3890*	C2
C2863*	A1	D6862*	C4	Q7862	E13	R3865*	B13	ZD6837	B4
C2864	A13	D6867	C12	Q7863	D14	R3866*	B13	ZD6838	C4
C2866*	B13	D6868	C12	R3831	F5	R3869*	C12	* Located on bottom of board.	
C2867*	B14	D6869	A13	R3832	F6	R3870*	E12		
C2868*	C12	FB5860	D13	R3833	F5	R3871*	C13		
C2869	C13	FB5861	E13	R3834	E6	R3872*	C14		
C2870*	C14	IC7830	F2	R3835	E4	R3873*	C14		
C2871	E11	L5842	H9	R3836	F8	R3874	G11		



LARGE SIGNAL BOARD - BOTTOM VIEW



LARGE SIGNAL BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

C2012	D8	C2727	I11	Q7990	D6	R3503	O6	R3959	E7
C2201	O9	C2728	I11	Q7991	C6	R3512	M8	R3962	C6
C2203	O8	C2729	H11	Q7992	C6	R3513	M7	R3963	F5
C2206	O9	C2730	H11	R3037	D8	R3701	H10	R3965	E6
C2208	O8	C2731	G10	R3038	D8	R3702	G10	R3966	E6
C2211	O8	C2732	G10	R3202	O9	R3705	H11	R3968	H8
C2217	O9	C2735	G10	R3204	O8	R3706	H11	R3977	I6
C2219	O9	C2932	E5	R3207	O9	R3707	H11	R3978	C6
C2225	P10	C2963	F5	R3209	O8	R3708	I10	R3979	C6
C2227	O8	D6238	I9	R3224	P10	R3709	I10	R3986	G6
C2233	O7	D6266	J9	R3225	O10	R3710	G10	R3987	G6
C2239	P7	D6271	L10	R3234	O7	R3711	G10	R3989	H7
C2248	N10	D6273	L10	R3239	P7	R3712	F9	R3992	D6
C2249	O8	D6274	M9	R3241	L11	R3713	F9	R3993	D6
C2262	O11	D6275	M9	R3247	O9	R3715	F9	R3994	D6
C2266	N10	D6276	M9	R3248	P6	R3716	F9	R3997	C7
C2276	J9	D6279	L11	R3255	N9	R3717	G9	ZD6201	P8
C2280	L11	D6463	J8	R3256	N9	R3719	F9	ZD6202	P9
C2281	M11	IC7703	F9	R3257	M9	R3720	F9	ZD6203	P8
C2282	M10	L5261	O11	R3263	O11	R3721	I10	ZD6204	P9
C2422A	K8	Q7224	P10	R3267	O11	R3722	F10	ZD6205	P8
C2442	J8	Q7273	L10	R3268	O11	R3723	F9	ZD6206	P8
C2490	K8	Q7276	J9	R3271	M10	R3724	H10	ZD6208	O7
C2492	K7	Q7277	J9	R3272	L11	R3725	G10	ZD6267	O11
C2501	P5	Q7280	M10	R3273	M10	R3728	G10	ZD6268	O11
C2503	O5	Q7467	K7	R3274	M10	R3730	H11	ZD6279	L11
C2536	P5	Q7513	M8	R3276	J9	R3731	I11	ZD6468	N1
C2706	I10	Q7701	H11	R3277	J9	R3733	H10	ZD6977	C6
C2711	F10	Q7704	H10	R3280	M11	R3734	I11		
C2713	F9	Q7710	I10	R3281	L11	R3735	H11		
C2714	F9	Q7711	I11	R3282	J9	R3917	E6		
C2716	F9	Q7712	F9	R3283	M10	R3931	D6		
C2717	F9	Q7922	E6	R3438	M8	R3932	E5		
C2719	H10	Q7932	E5	R3440	K8	R3942	G8		
C2720	H10	Q7944	B6	R3484	K7	R3947	G7		
C2722	H10	Q7950	D6	R3485	K7	R3957	L2		
C2723	H10	Q7987	G7	R3501	O6	R3958	I5		

PHILIPS

MODEL 27PT81S125 (CHASSIS 27H8)



PARTS LIST

Item No.	Type No.	Mfr. Part No.	NTE Part No.	Item No.	Type No.	Mfr. Part No.	NTE Part No.	Item No.	Function/Rating	Mfr. Part No.	Notes
D1008	-	9322 050 99682	-	Q7053A, B	BC847BS	9340 425 20115	-	# C2416	390pF 10% 2kV	2020 558 90482	-
D6091	BAT85	9336 247 60133	NTE585	Q7063	BC847BW	3198 010 42310	-	# C2419	.36 5% 250V	2222 479 90019	-
D6238, 66	-	3198 010 10630	-	Q7224	BC847B	3198 010 42030	NTE2408	C2843	.0022 10% 2kV	2020 558 90559	-
D6271, 73 ,74	-	3198 010 10630	-	Q7273	BC857B	3198 010 42150	NTE2409	# C2902	.47 20% 275VAC	2222 336 29148	-
D6275, 76	-	3198 010 10630	-	Q7276	BC847B	3198 010 42030	NTE2408	C2908, 09	.0022 10% 1kV	3198 019 52220	-
D6302	-	9322 125 45685	-	Q7277	BC857B	3198 010 42150	NTE2409	C2922	.0022 10% 2kV	2020 558 90559	-
D6303	-	9322 137 65685	-	Q7280	BC847B	3198 010 42030	NTE2408	# C2929	.0022 20% 250VAC	2020 554 90127	-
D6307	1SS355	9322 112 83685	NTE519	Q7307	BC847BW	3198 010 42310	-	C2938	470pF 10% 1kV	3198 019 64710	-
D6412	1SS355	9322 112 83685	NTE519	Q7331	BC857BW	3198 010 42320	-	# F1900	Fuse	2422 086 10905	4A, 250V
D6413	1N4148	3198 010 10010	NTE519	Q7368	BC847BW	3198 010 42310	-	# F1941	Fuse	2422 086 10782	1.6A, 250V
D6414	-	9340 347 60112	-	Q7408	BF423	3198 020 43020	NTE288	# F1961	Fuse	2422 086 10782	1.6A, 250V
D6415	1SS355	9322 112 83685	NTE519	Q7410	BU4522AX	9340 547 93127	-	FB5860, 61	Ferrite Bead	2422 535 96559	-
D6419, 20	BYD33D	9337 234 00133	NTE569	Q7412	BC847BS	9340 425 20115	-	FB5920, 24, 36	Ferrite Bead	3198 018 90010	-
D6439	-	3198 010 22790	NTE5033A	Q7415A, B	BC847BS	9340 425 20115	-	FB5941, 61, 71	Ferrite Bead	3198 018 90010	-
D6440, 43	1N4148	3198 010 10010	NTE519	Q7421, 25	BC847BW	3198 010 42310	-	J1254	Jack	2422 026 04747	Headphone
D6445	BYD33J	9337 234 20133	NTE569	Q7440	BC557B	3198 020 40110	NTE159	J1255	Jack	2422 026 05026	Assembly
D6447, 48	-	9336 215 90112	-	Q7442, 46	BC847BW	3198 010 42310	-	J1256	Jack	2422 026 04926	SVHS
D6461	BYD33D	9337 234 00133	NTE569	Q7464	BC547B	3198 020 40030	NTE123AP	J1262	Jack	2422 026 05106	Assembly
D6463	-	9340 255 30115	-	Q7467	BC857B	3198 010 42150	NTE2409	J1264	Jack	2422 026 04926	SVHS
D6474	-	9340 559 53112	-	Q7470	-	9322 123 96687	-	# L1 (1)	Yoke	-	Horiz 1.1mH, Vert 13.5mH
D6475	-	-	-	Q7478, 80	BC547B	3198 020 40030	NTE123AP	L5040, 41, 42	4.7µH	3198 018 64780	-
D6480	1N4148	3198 010 10010	NTE519	Q7481	BF819	9335 354 50127	NTE198	L5201, 02	22µH	3198 018 12290	-
D6505	BYD33D	9337 234 00133	NTE569	Q7513	BC847B	3198 010 42030	NTE2408	L5203	-	3198 021 90020	-
D6511	1N4148	3198 010 10010	NTE519	Q7701, 04, 10	BC847B	3198 010 42030	NTE2408	L5204	-	0322 179 00003	-
D6512	-	3198 010 25680	NTE5011T1	Q7711, 12, 51	BC857B	3198 010 42150	NTE2409	L5261	5.6µH	3198 018 35680	-
D6522	BYD33D	9337 234 00133	NTE569	Q7751	BC857B	3198 010 42150	NTE2409	L5309, 32, 33, 34	6.8µH	3198 018 66880	-
D6523	-	-	-	Q7752	BC847B	3198 010 42030	NTE2408	L5401	.82µH	3198 018 38270	-
D6524	-	-	-	Q7753	BC857B	3198 010 42150	NTE2409	L5402	-	-	-
D6605	1SS355	9322 112 83685	NTE519	Q7754	BC847B	3198 010 42030	NTE2408	L5406	Horizontal Driver	3128 138 33341	-
D6701	1N4148	3198 010 10010	NTE519	Q7804 Thru	-	3198 010 42030	-	L5409, 11	Ferrite Bead	3198 018 90020	-
D6751 Thru	-	-	-	Q7807	BC847B	3198 010 42030	NTE2408	L5417	Horizontal Linearity	3128 138 53181	-
D6754	-	9322 112 83685	-	Q7810, 13	BC847B	3198 010 42030	NTE2408	L5421	22µH	3198 018 32290	-
D6801	-	9336 247 60133	-	Q7816, 17	BC847B	3198 010 42030	NTE2408	L5422, 25, 26	15µH	3198 018 61590	-
D6831	-	3198 010 10070	NTE177	Q7860	BF199	9330 634 20126	NTE229	L5430	22µH	2422 535 95365	-
D6832	-	9340 255 30115	-	Q7861	BF370	9335 447 20126	-	L5445	27µH	3198 018 22790	-
D6833, 35	-	3198 010 10070	NTE177	Q7862	BD830	9334 507 70127	-	L5446, 48	12µH	2422 535 95598	-
D6861, 62	-	9340 255 30115	-	Q7863	BD829	9334 507 60127	NTE49	L5475	-	3128 138 37021	-
D6867, 68	1N4148	3198 010 10010	NTE519	Q7891	BC337-25	3198 020 43530	NTE123AP	L5521, 23, 24	Ferrite Bead	2422 535 95444	-
D6869	-	3198 010 23980	-	Q7911, 12	BC369	-	-	L5601	1µH	3198 018 61080	-
D6915	-	9322 132 55667	-	Q7915	BC847B	3198 010 42030	NTE2408	L5602	4.7µH	3198 018 64780	-
D6916	-	3198 010 23390	-	Q7917	BC857B	3198 010 42150	NTE2409	L5625	1µH	3198 018 61080	-
D6926, 28, 29	BYD33D	9337 234 00133	NTE569	Q7918	BC847B	3198 010 42030	NTE2408	L5665	15µH	3198 018 61590	-
D6932	1N4148	3198 010 10010	NTE519	Q7920, 22	BC857B	3198 010 42150	NTE2409	L5842	39µH	2422 535 95596	-
D6938	-	9340 380 20127	-	Q7932, 44, 50	BC847B	3198 010 42030	NTE2408	L5862	5.6µH	3198 018 25680	-
D6941	-	9322 128 18682	-	Q7965	BC337	9331 796 00126	NTE188	L5886, 88, 90	Delay Line	2722 122 00252	-
D6942	BYD33D	9337 234 00133	NTE569	Q7987, 90	BC857B	3198 010 42150	NTE2409	L5890A	10µH	3198 018 210 90	-
D6961	-	9322 128 18682	-	Q7991, 92	BC847B	3198 010 42030	NTE2408	L5891, 92	10µH	3198 018 210 90	-
D6971	-	9322 100 13682	-	ZD6031	BZX284-C2V4	9322 131 13685	-	L5901	IFT	3139 128 23341	-
D6973	1N4148	3198 010 10010	NTE519	ZD6201 Thru	-	-	-	L5902	4.7µH	3198 018 24780	-
D6986	-	3198 010 21590	NTE5024A	ZD6208	-	3198 020 51290	-	L5903	.82µH	3198 018 38270	-
D6991	-	3198 010 28280	NTE5016A	ZD6267, 68	BZX284-C6V8	9322 150 07685	-	L5905	4.7µH	3198 018 14780	-
IC7064	SAA5667	9352 659 94557	-	ZD6279	-	3198 020 55680	-	L5906	5.6µH	3198 018 15680	-
IC7066	M24C32	9322 124 74668	-	ZD6464	BZX79-C4V7	9331 668 30133	-	L5939	27µH	2422 535 95366	-
IC7301	TDA8887H	9352 638 72557	-	ZD6472	BZX79-C10	3198 010 21090	-	LC5902	Filter	2422 549 43432	-
IC7401	74LV153PW	9351 869 40118	-	ZD6837, 38	-	9337 534 80133	-	M0084	Socket	2422 500 80053	CRT
IC7405	TC90A45F	9322 144 38668	-	ZD6890	-	9340 385 80115	-	R3039, 40	10 5% 3W	3198 012 31090	-
IC7407	74HC4066PW	9351 750 00118	-	ZD6291	-	3198 020 51290	-	R3331, 32	2.2 5% 1/8W Fusible	2322 750 62208	-
IC7501	-	9339 229 40682	NTE1788	ZD6292, 93, 94	-	3198 020 51290	-	R3405	4700 5% 5W	2322 257 41472	-
IC7630	74HC4052	9351 874 90118	-	ZD6464	-	9331 668 30133	-	R3430, 34	33 5% 3W	3198 012 22230	-
IC7651	MSP3435	9322 143 55671	-	ZD6468	-	3198 020 51090	-	# R3411	330K 5% 1/2W	2322 242 13334	-
IC7702	AN5277	9322 148 81667	-	ZD6472	-	3198 010 21090	-	# R3445 Thru	-	-	-
IC7703	TDA1308T	9350 721 10115	-	ZD6481	-	3198 010 53390	-	# R3449	1 5% 1/2W Fusible	2306 207 03108	-
IC7801	-	9333 729 60653	-	ZD6890	-	9340 385 80115	-	R3482	10K 1%	2322 156 21003	-
IC7803	-	9322 146 60682	-	ZD6921	-	3198 010 23390	-	R3483	3300 1%	2322 156 23302	-
IC7830	-	9352 561 40112	-	ZD6966	-	3198 010 23980	-	# R3487	1 5% 1/2W Fusible	2306 207 03108	-
IC7910	M6230	9322 127 15668	-	ZD6977	-	3198 020 55180	-	R3492	1200 1%	2322 734 61202	-
IC7914	TDA9801/V1	9352 606 44112	-	-	-	-	-	R3504	2200 1%	2322 156 22202	-
IC7916	HEF4053BT	9333 729 60653	-	-	-	-	-	# R3521	1.5 5% Fusible	2306 204 03158	-
IC7919	TDA8601T	9351 538 90518	-	-	-	-	-	# R3736, 37	1 5% 1/3W Fusible	2306 204 03108	-
IC7921	STR-F6426	9322 140 37682	-	-	-	-	-	# R3840	100 5% 1/3W Fusible	2306 204 03101	-
# IC7929	TCET1103(G)	9322 140 14667	-	-	-	-	-	# R3841, 42	1 5% 1/3W Fusible	2306 204 03108	-
# IC7942	-	9337 220 80682	NTE956	-	-	-	-	R3874	8200 5% 5W	2322 257 41822	-
IC7967, 68	SI-3050C	9322 137 01682	-	-	-	-	-	# R3901	4.7M 5% 1/2W	2322 242 13475	-
IC7971	SEI130N	9322 116 23682	-	-	-	-	-	# R3902	2.2M 5% 1/2W	2322 242 13225	-

Item No.	Function/Rating	Mfr. Part No.	Notes
L5262	12µH	3198 018 21290	-
# AC01	Line Cord	3135 010 03831	AC, Polarized
# AC10	Degaussing	2422 549 44675	-
# C2411	390pF 10% 2kV	2020 558 90482	-
# C2415A	.012 1.6kV	2222 375 90156	-